
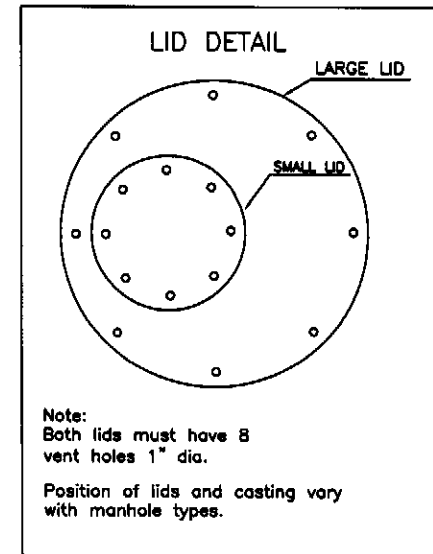
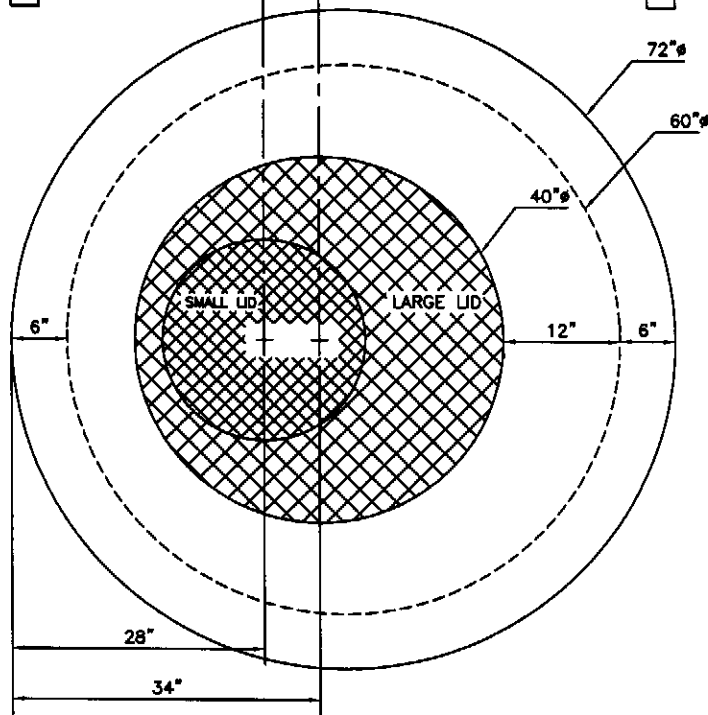
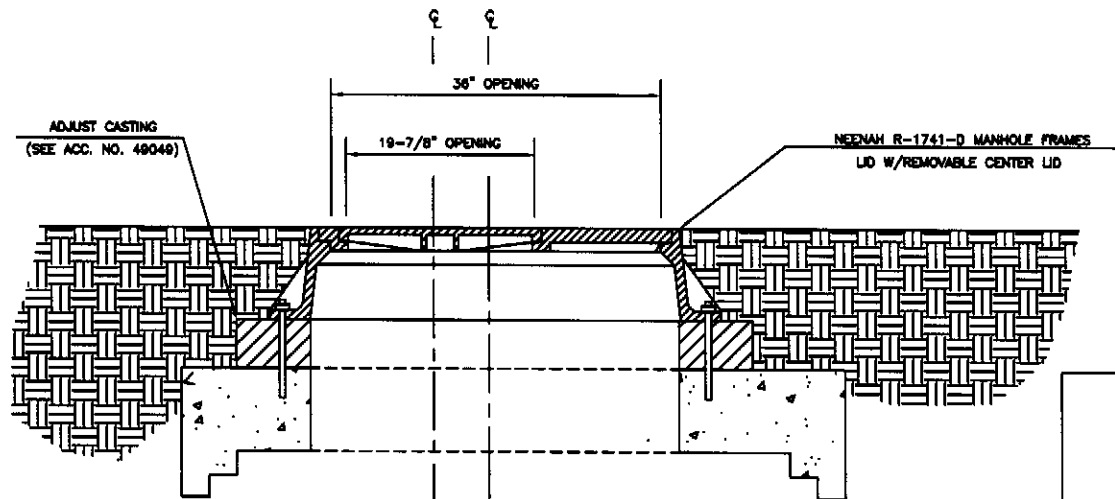


THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI
DRAWINGS FOR
1" TO 3" LOW PRESSURE FORCE MAIN

APPROVED: 
SEWERS CHIEF ENGINEER
APRIL 2021 LPFM01



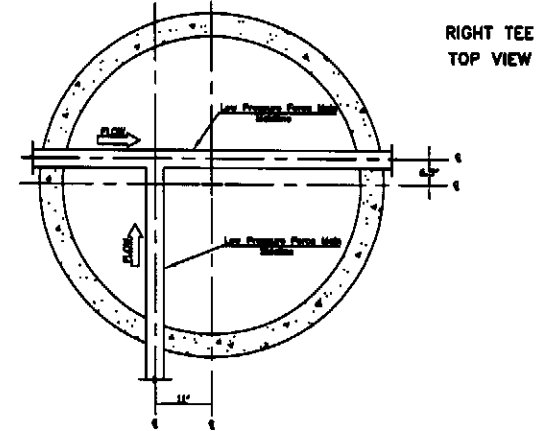
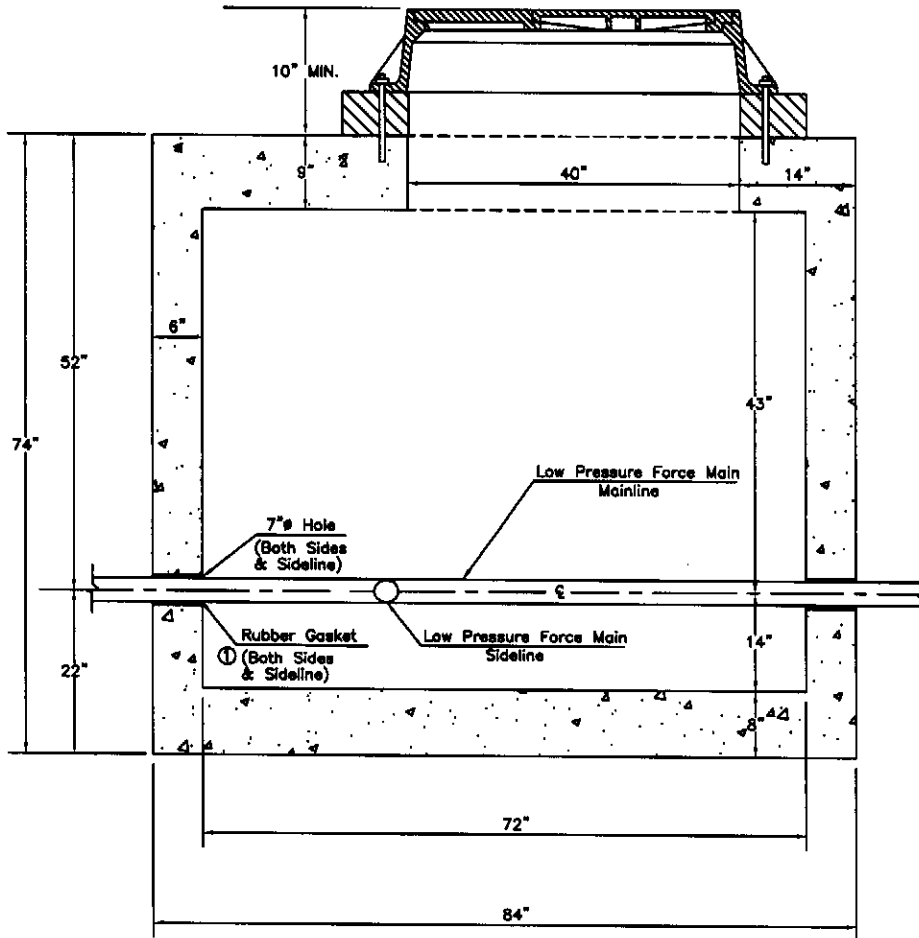
THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

**SLAB LID AND CASTING
1" TO 3" LOW PRESSURE
FORCE MAINS**

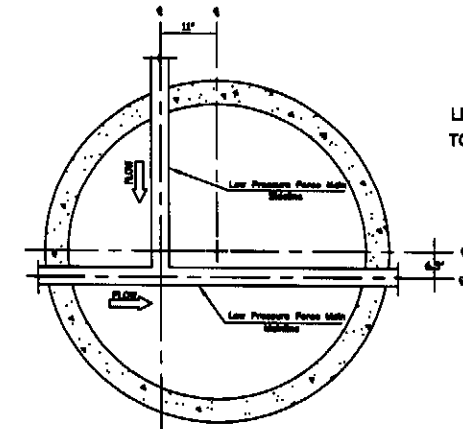
NOTE:

1. KOR-N-SEAL NPC FLEXIBLE MULTI-PURPOSE CONNECTOR S106-7S SPECIAL TOOL REQUIRED FOR INSTALLATION

SIDE VIEW

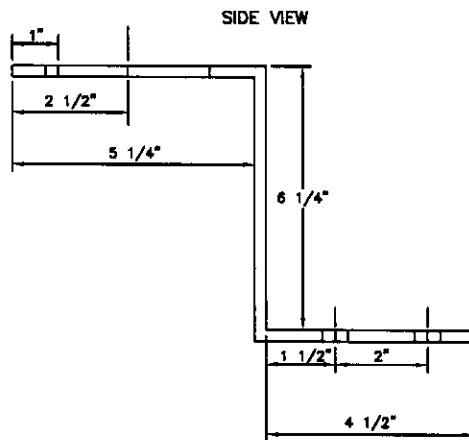
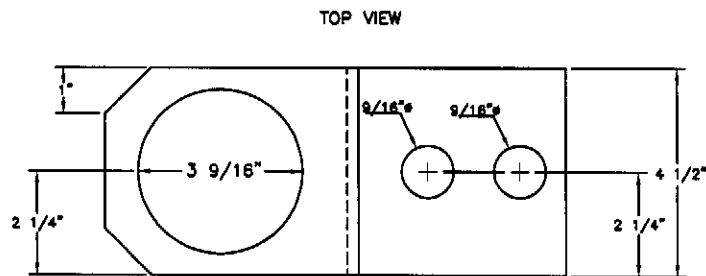


RIGHT TEE
TOP VIEW

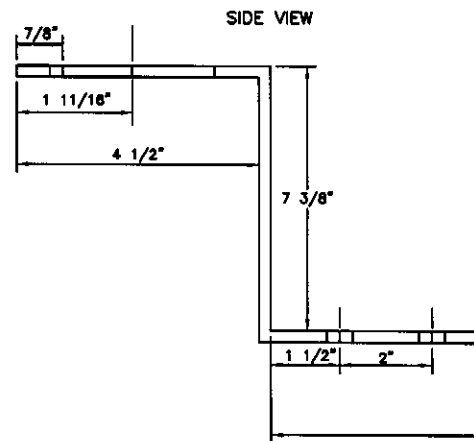
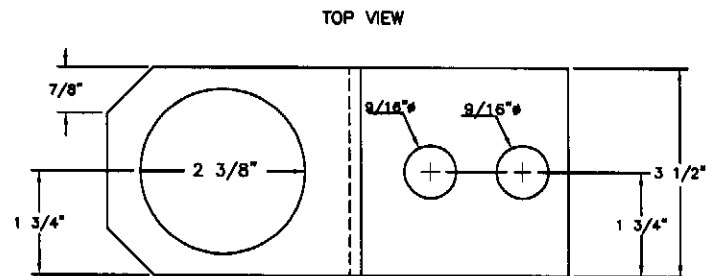


LEFT TEE
TOP VIEW

THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI
TEE CHAMBER DETAIL
1" TO 3" LOW PRESSURE
FORCE MAINS



FLUSH CHAMBER



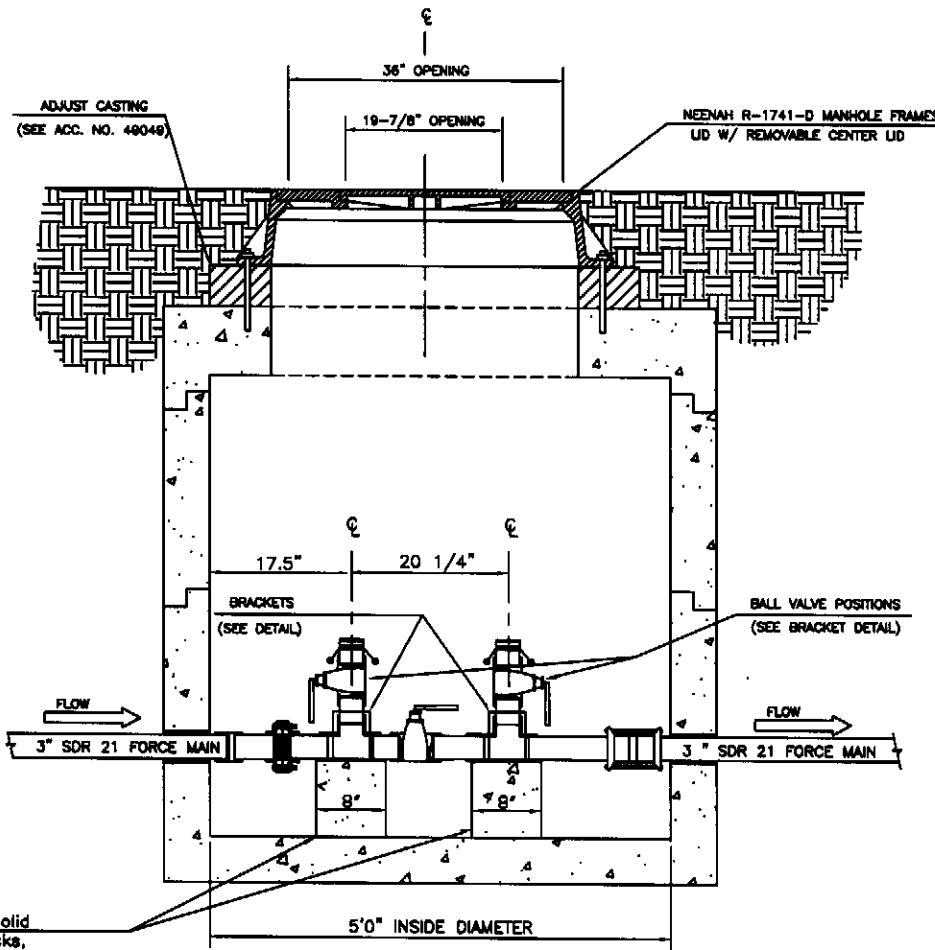
AIR RELIEF CHAMBER

NOTE:

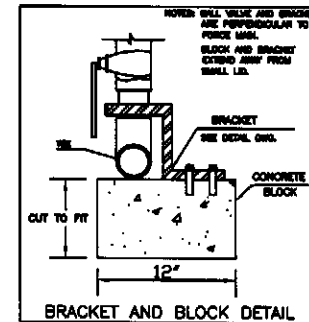
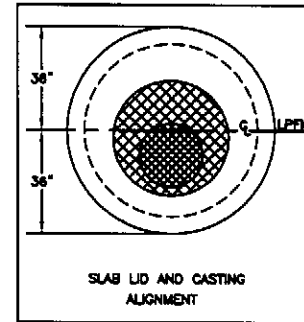
1/4" FLAT STOCK. BRACKETS
 FOR SCHEDULE 40 PIPE MADE OUT OF
 S.S. STOCK 304 OR 316.
 1/2" X 3-3/4" S.S. WEDGE ANCHOR BOLTS
 2 EACH PER BRACKET.

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI

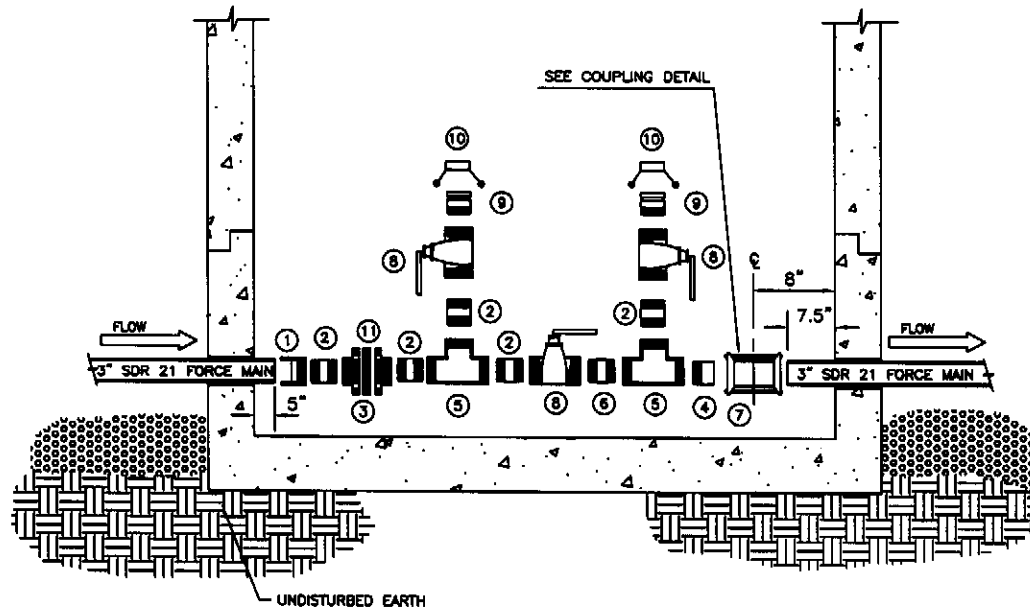
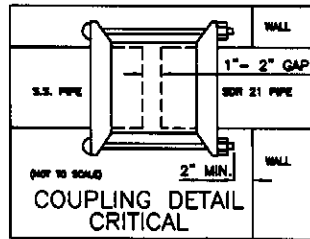
BRACKET DETAILS
 1" TO 3" LOW PRESSURE
 FORCE MAINS



2-12x8x16 solid concrete blocks, height cut to fit, set in mortar.



THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI
**3" LOW PRESSURE FORCE MAIN
FLUSHING CHAMBER**



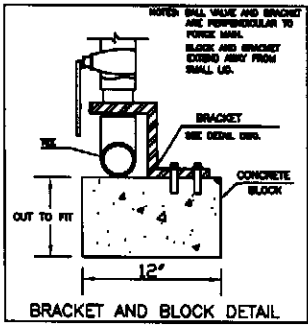
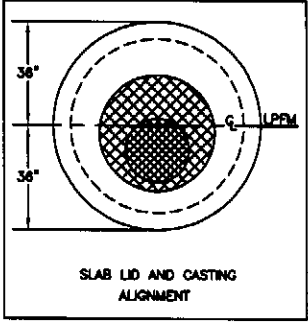
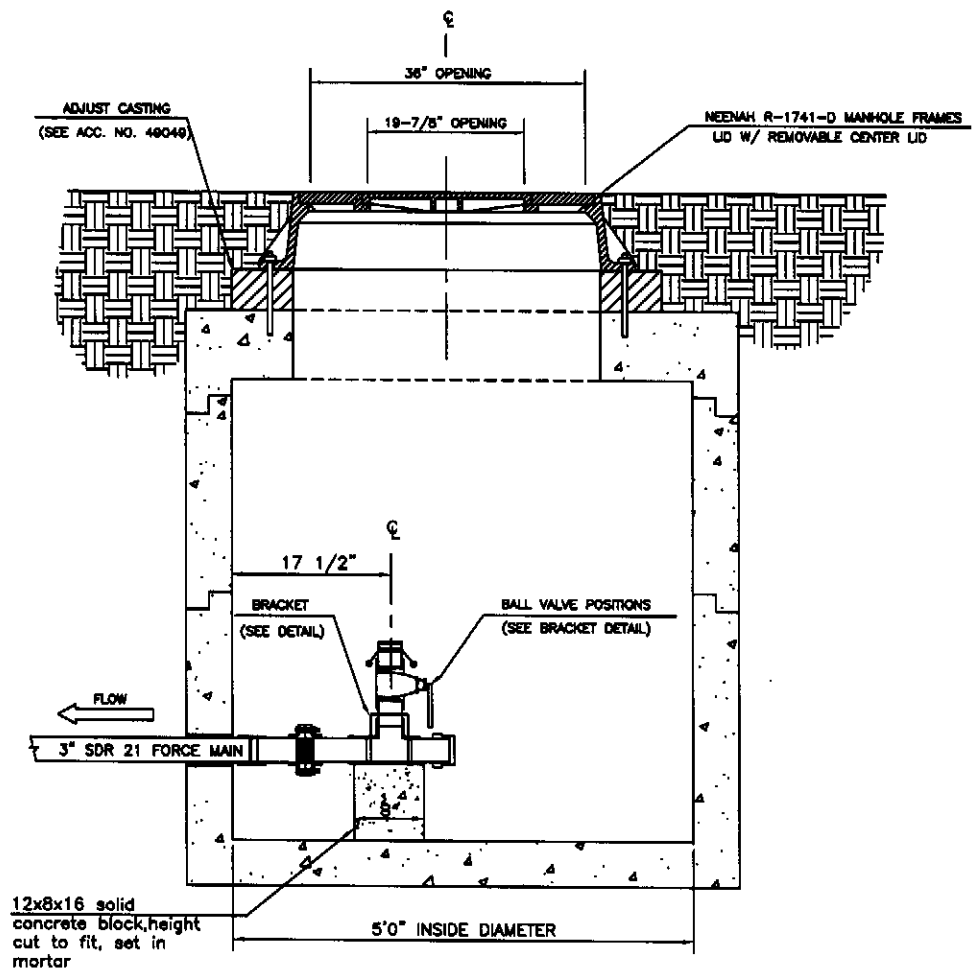
GENERAL NOTES:
 * ALL MATERIALS MUST BE 304 STAINLESS STEEL
 SCHEDULE 40 (EXCEPT AS NOTED)

EXPLODED VIEW
 NOT TO SCALE

NOTES

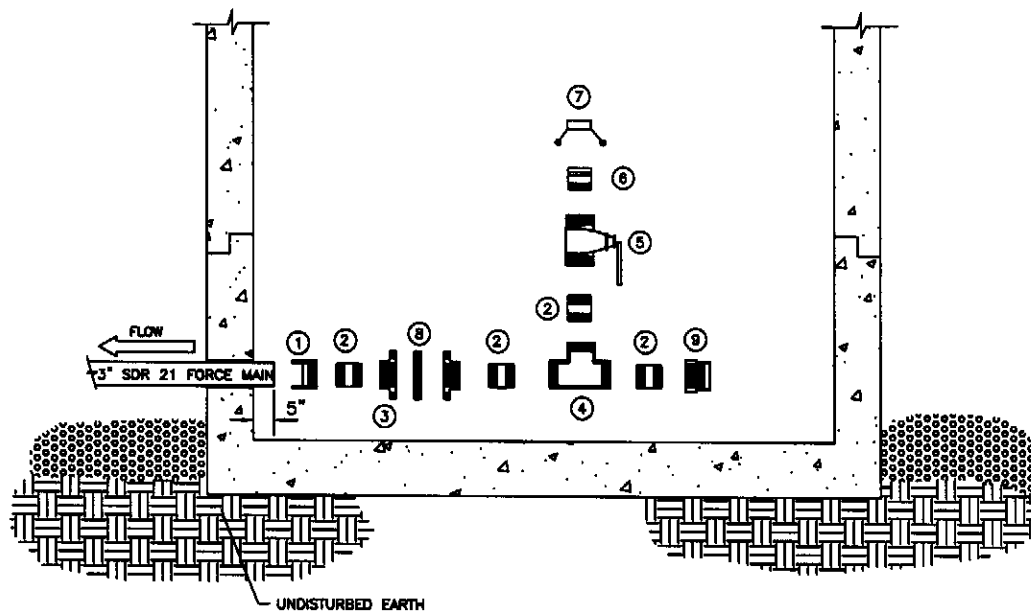
- ① 3" SCHEDULE 40 PVC (PRESSURE)
SOCKET X FEMALE ADAPTER
- ② 3" X 4" NIPPLE
(BOTH ENDS THREADED)
- ③ 2ea. 3" THREADED FLANGES
7.5" X 1-3/16" TH. (150psi)
4ea. 5/8"-11 S.S. HEXHEAD
CAP SCREWS.
8ea. 5/8" S.S. FLATWASHERS.
4ea. 5/8" S.S. SPLITLOCK WASHERS
4ea. 5/8"-11 S.S. HEXHEAD NUTS
- ④ 3" X 11.5" PIPE
(ONE END THREADED)
- ⑤ 3" X 3" X 3" THREADED TEE (150psi)
- ⑥ 3" X 7-1/4" PIPE
(BOTH ENDS THREADED)
- ⑦ ROMAC PART#
511-3.50 X 3.50 X 7SSFE
WITH NBR GASKETS
- ⑧ 3" S.S. STREAM FLOW BALL VALVE
MODEL BV150SS3FP
S.S. FULL PORT
S.S. BALL VALVE THREADED
HANDLE CUT TO FIT
MAXIMUM CLEARANCE 1"
REMOVE LATCH LOCK
- ⑨ 3" CAM & GROOVE
MALE ADAPTOR BY 3" MALE
N.P.T. (BRASS)
- ⑩ 3" CAM & GROOVE DUST CAP
(BRASS)
- ⑪ GASKET 1/16" OR 1/8" THICK
GARLOC OR NON-ASBESTOS

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI
 3" LOW PRESSURE FORCE MAIN
 FLUSHING CHAMBER DETAIL



THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

3" LOW PRESSURE FORCE MAIN
TERMINAL FLUSHING CHAMBER



NOTES

- ① 3" SCHEDULE 40 PVC (PRESSURE) SOCKET X FEMALE ADAPTER
- ② 3" X 4" NIPPLE (BOTH ENDS THREADED)
- ③ 2ea. 3" THREADED FLANGES 7.5" X 1-3/16" TH. (150psi)
4ea. 5/8"-11 S.S. HEXHEAD CAP SCREWS.
8ea. 5/8" S.S. FLATWASHERS.
4ea. 5/8" S.S. SPLITLOCK WASHERS
4ea. 5/8"-11 S.S. HEXHEAD NUTS
- ④ 3" X 3" X 3" THREADED TEE (150 PSI) (BOTH ENDS THREADED)
- ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑥ 3" CAM & GROOVE MALE ADAPTOR BY 3" MALE N.P.T. (BRASS)
- ⑦ 3" CAM & GROOVE DUST CAP (BRASS)
- ⑧ GASKET 1/16" OR 1/8" THICK GARLOC OR NON-ASBESTOS
- ⑨ 3" DIA S.S. PIPE CAP

GENERAL NOTES:

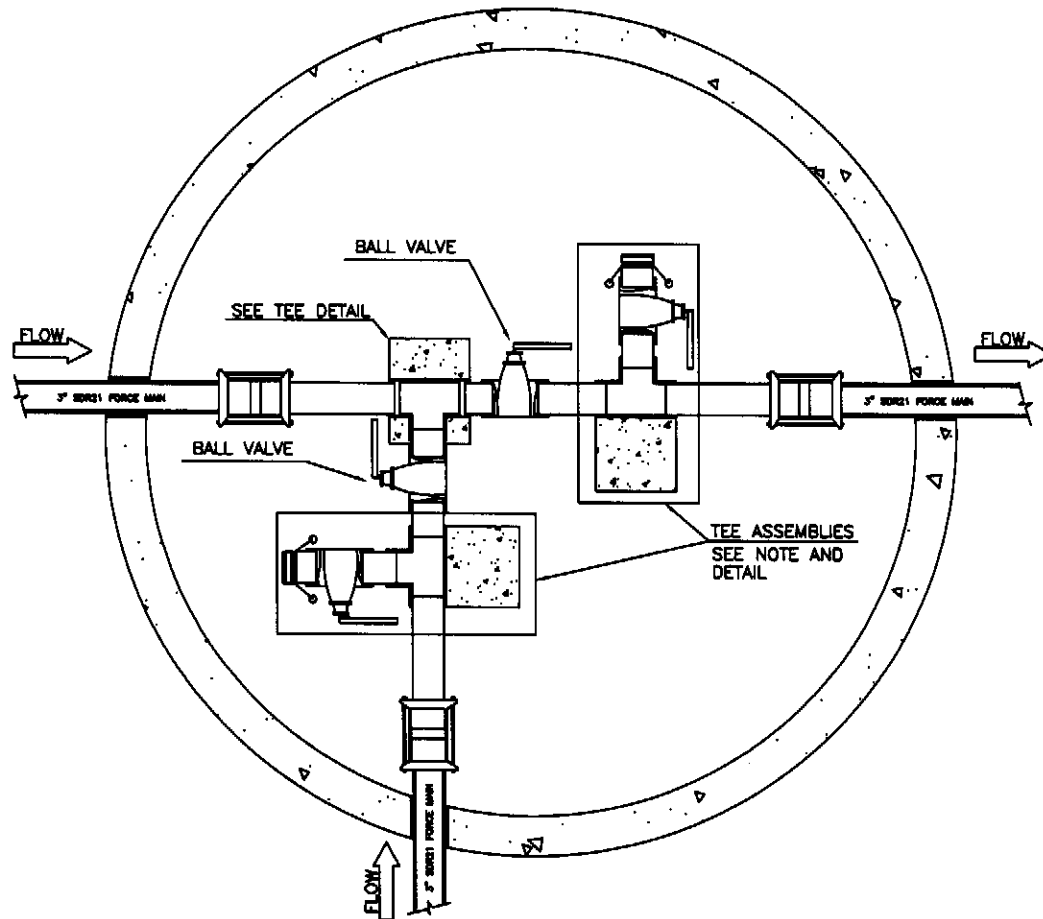
- * ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

EXPLODED VIEW

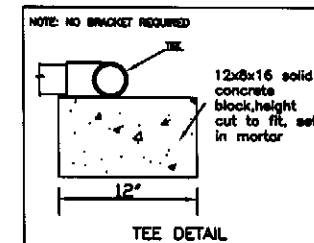
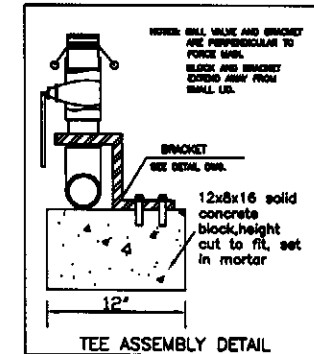
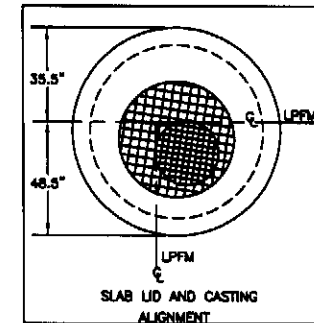
NOT TO SCALE

THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

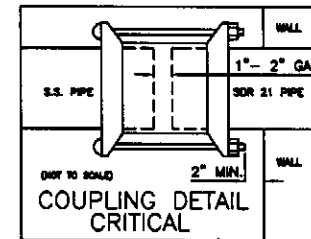
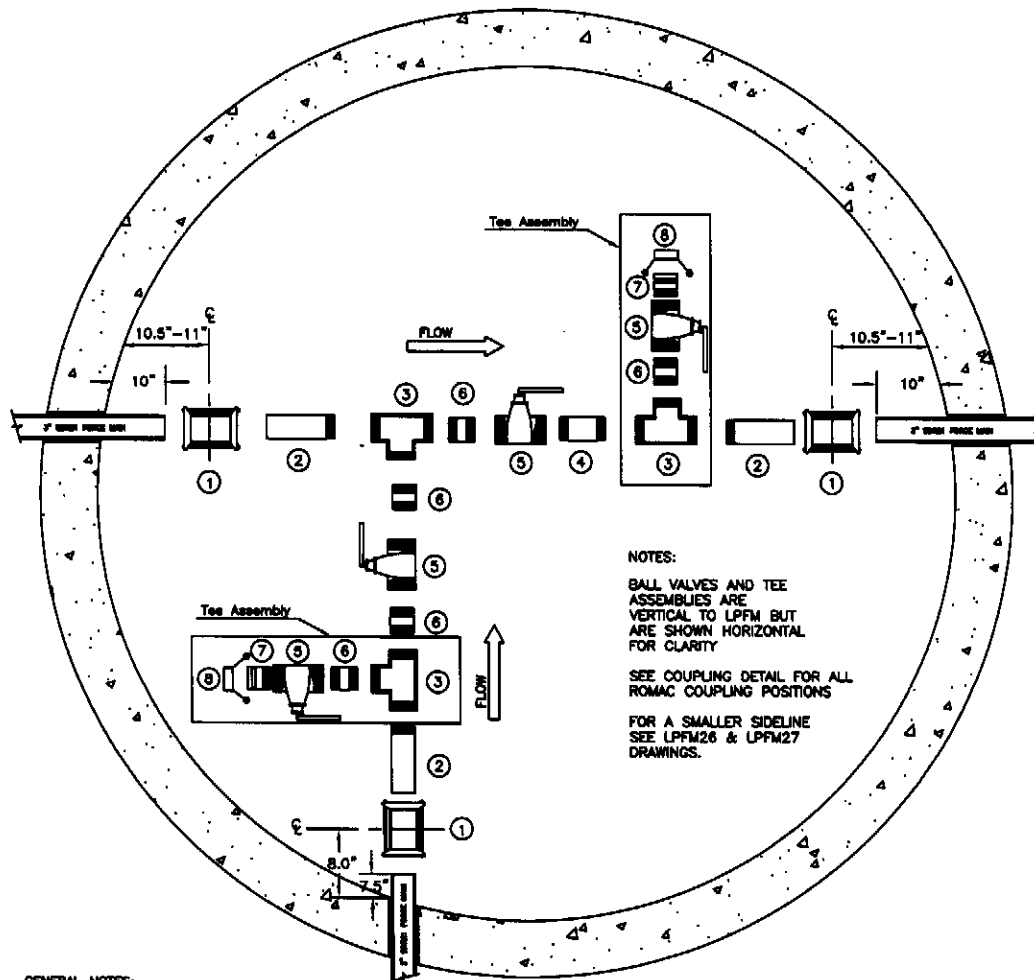
3" LOW PRESSURE FORCE MAIN TERMINAL FLUSHING CHAMBER DETAIL



NOTE:
Ball Valves and Tee Assemblies
are vertical to LPPM but are
shown horizontal for clarity.



THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI
**3" LOW PRESSURE FORCE MAIN
RIGHT TEE FLUSHING CHAMBER**



NOTES

- ① ROMAC PART# S11-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
- ② 3" X 32" PIPE (ONE END THREADED)
- ③ 3" X 3" X 3" THREADED TEE (150psi)
- ④ 3" X 7-1/4" PIPE (BOTH ENDS THREADED)
- ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑥ 3" X 4" NIPPLE (BOTH ENDS THREADED)
- ⑦ 3" CAM & GROOVE MALE ADAPTOR BY 3" MALE N.P.T. (BRASS)
- ⑧ 3" CAM & GROOVE DUST CAP (BRASS)

NOTES:

BALL VALVES AND TEE ASSEMBLIES ARE VERTICAL TO LPFM BUT ARE SHOWN HORIZONTAL FOR CLARITY

SEE COUPLING DETAIL FOR ALL ROMAC COUPLING POSITIONS

FOR A SMALLER SIDELINE SEE LPFM26 & LPFM27 DRAWINGS.

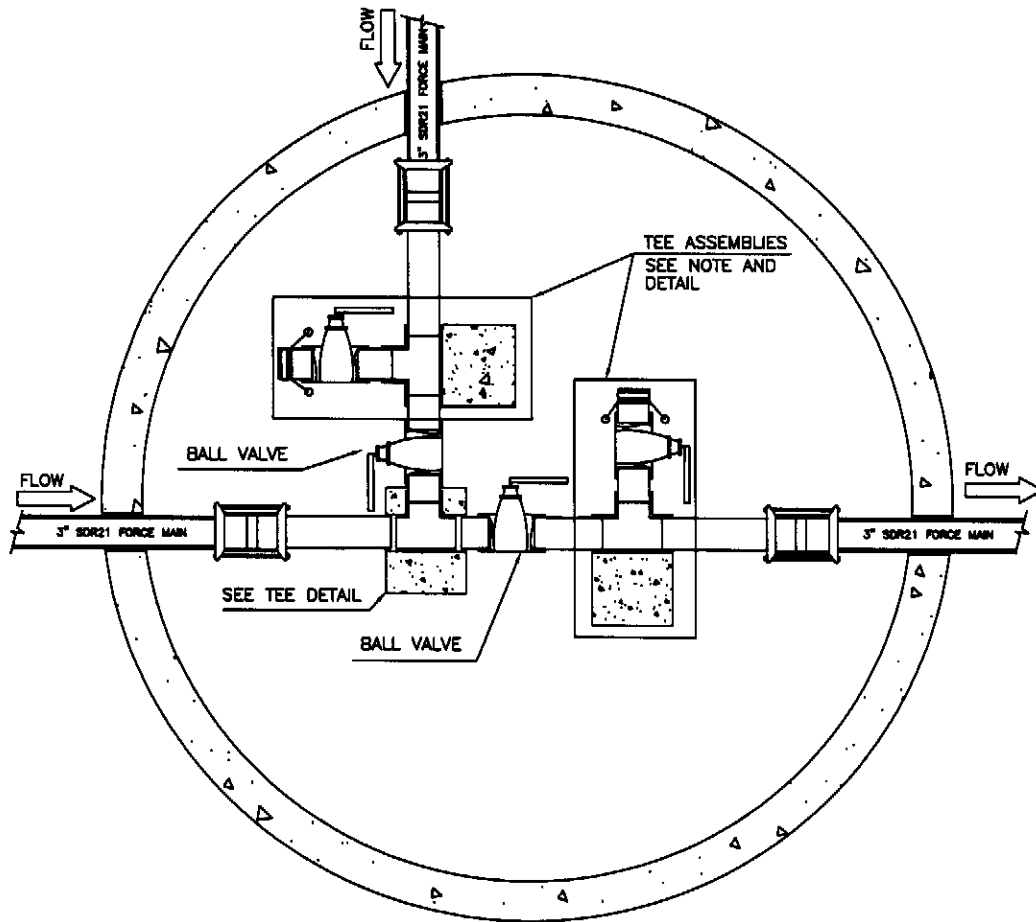
GENERAL NOTES:

- ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

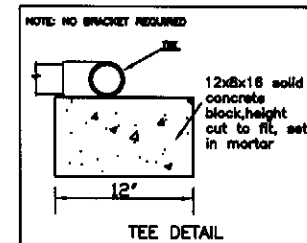
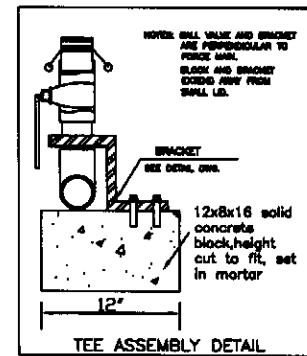
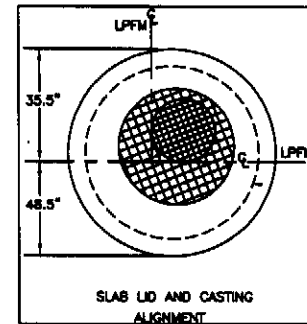
EXPLODED TOP VIEW
NOT TO SCALE

THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

**3" LOW PRESSURE FORCE MAIN
RIGHT TEE FLUSHING CHAMBER DETAIL**

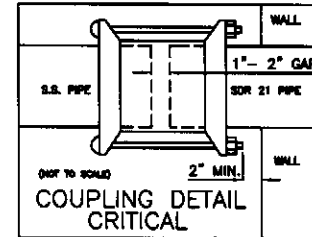
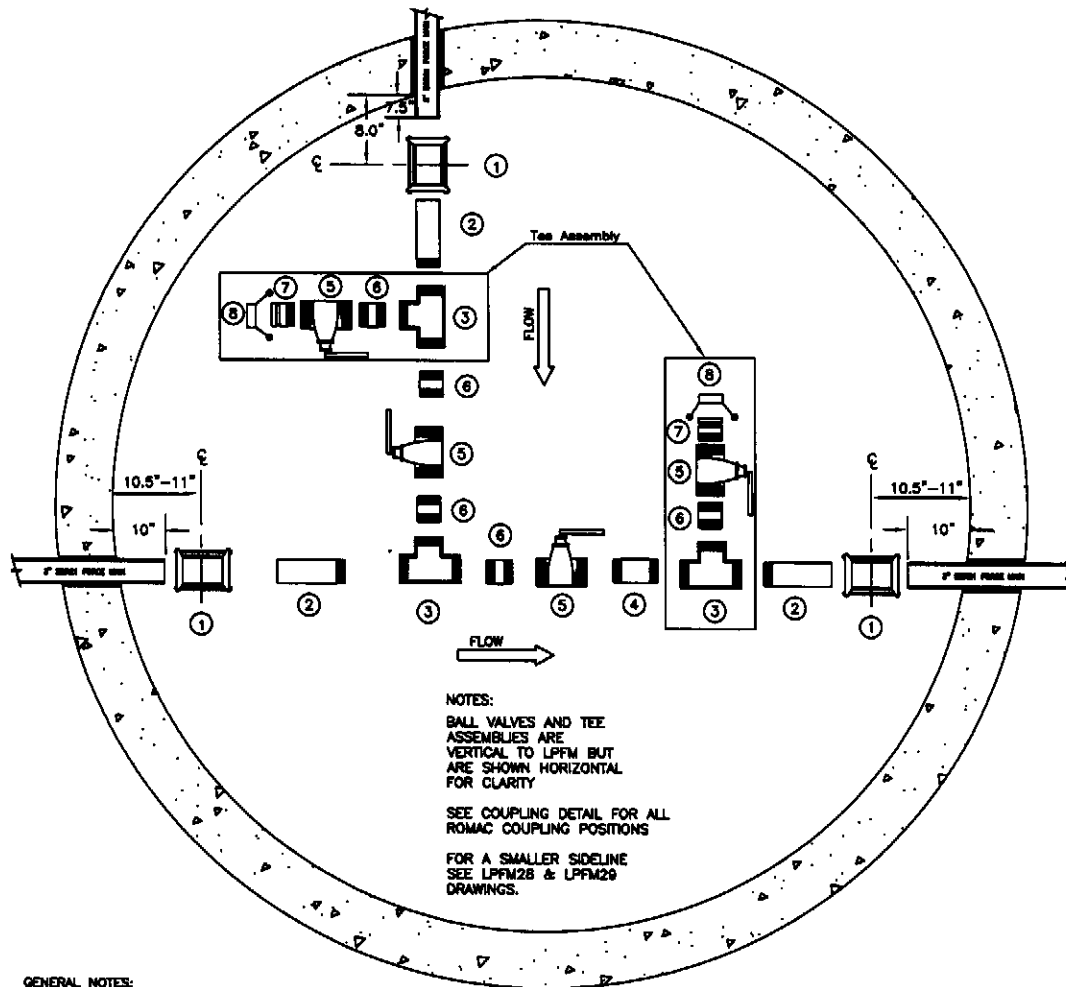


NOTE:
Ball Valves and Tee Assemblies
are vertical to LPFM but are
shown horizontal for clarity.



THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

**3" LOW PRESSURE FORCE MAIN
LEFT TEE FLUSHING CHAMBER**



NOTES

- ① ROMAC PART# 511-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
- ② 3"Ø X 32" PIPE (ONE END THREADED)
- ③ 3"X 3"X 3" THREADED TEE (150psi)
- ④ 3"Ø X 7-1/4" PIPE (BOTH ENDS THREADED)
- ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑥ 3"Ø X 4" NIPPLE (BOTH ENDS THREADED)
- ⑦ 3" CAM & GROOVE MALE ADAPTOR BY 3" MALE N.P.T. (BRASS)
- ⑧ 3" CAM & GROOVE DUST CAP (BRASS)

NOTES:
 BALL VALVES AND TEE ASSEMBLIES ARE VERTICAL TO LPFM BUT ARE SHOWN HORIZONTAL FOR CLARITY
 SEE COUPLING DETAIL FOR ALL ROMAC COUPLING POSITIONS
 FOR A SMALLER SIDELINE SEE LPPM28 & LPPM29 DRAWINGS.

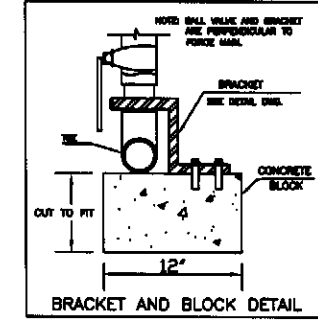
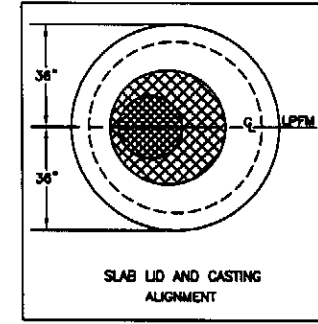
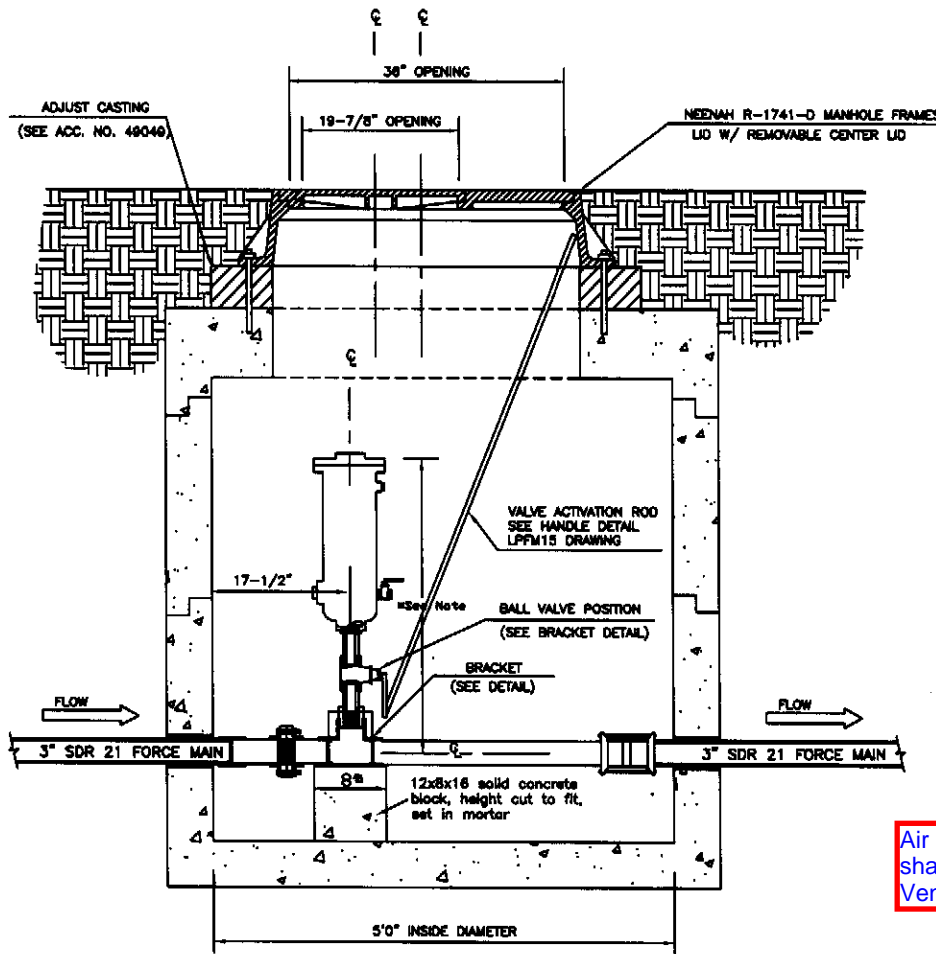
GENERAL NOTES:

* ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

EXPLODED TOP VIEW
 NOT TO SCALE

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI

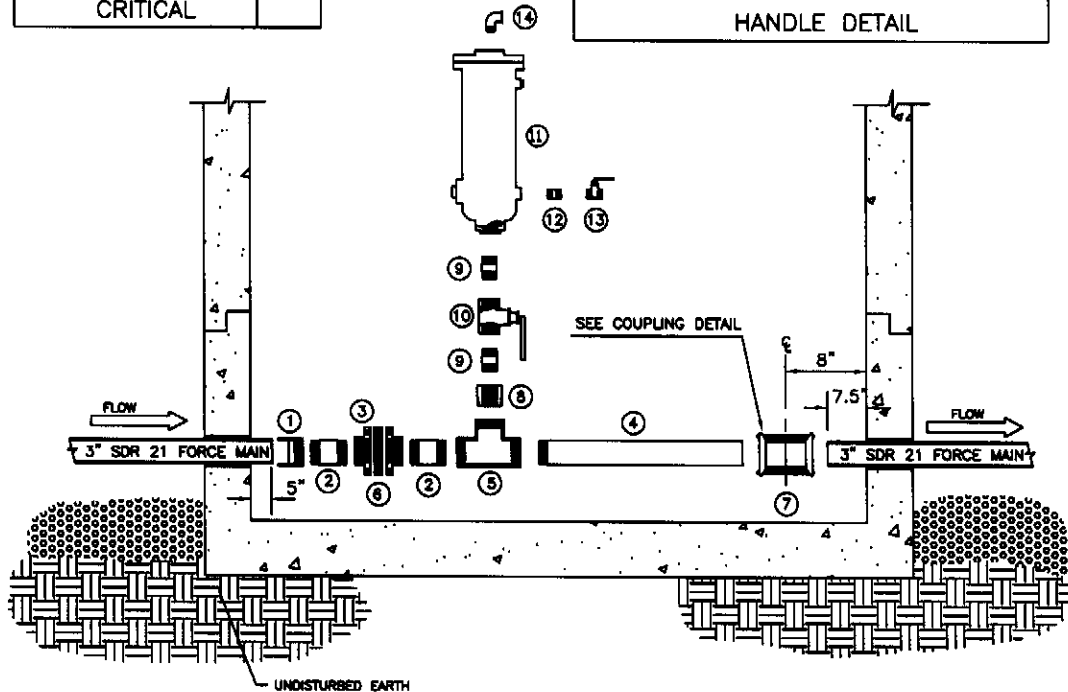
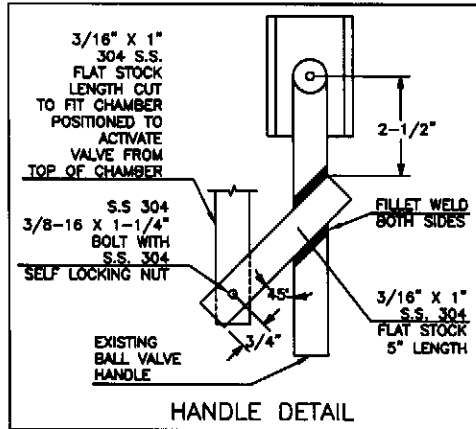
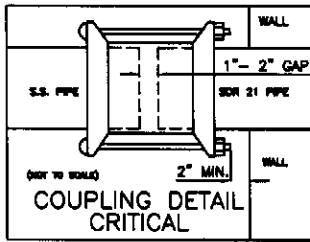
**3" LOW PRESSURE FORCE MAIN
 LEFT TEE FLUSHING CHAMBER DETAIL**



* NOTE: ACTUAL DIMENSION DEPENDS UPON AIR RELEASE VALVE.
~~APCC 445.1 - 30.6"~~
~~ARCC 445.1 - 33.6"~~

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI
3" LOW PRESSURE FORCE MAIN AIR RELIEF CHAMBER



GENERAL NOTES:

- * ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

EXPLODED VIEW
NOT TO SCALE

NOTES

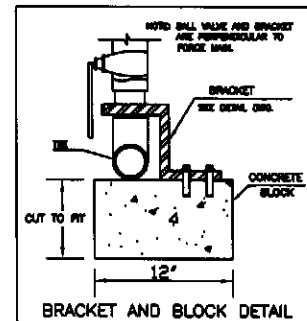
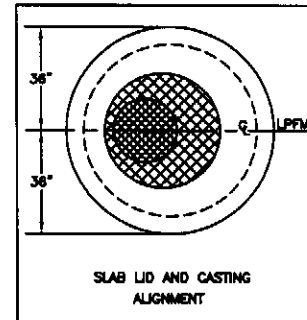
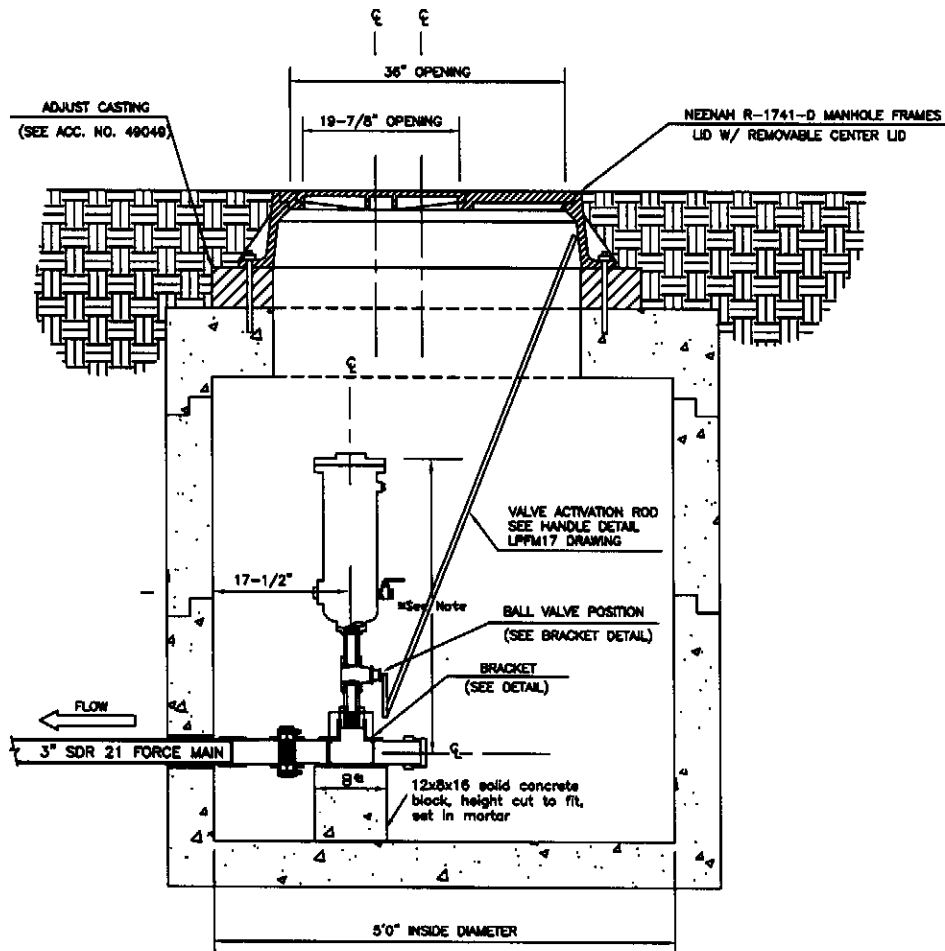
- ① 3" SCHEDULE 40 PVC (PRESSURE) SOCKET X FEMALE ADAPTER
- ② 3" x 4" NIPPLE (BOTH ENDS THREADED)
- ③ 2ea. 3" THREADED FLANGES 7.5" X 1-3/16" TH. (150psi)
4ea. 5/8-11 S.S. HEXHEAD CAP SCREWS.
6ea. 5/8" S.S. FLATWASHERS.
4ea. 5/8" S.S. SPLITLOCK WASHERS
4ea. 5/8-11 S.S. HEXHEAD NUTS
- ④ 3" x 32" PIPE (ONE END THREADED)
- ⑤ 3" X 3" X 3" THREADED TEE (150psi)
- ⑥ GARLOC OR NON-ASBESTOS GASKET 1/16" OR 1/8" TH.
- ⑦ ROMAC PART # 511-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
- ⑧ 3" to 2" BUSHING
- ⑨ 2" x 3" NIPPLE (BOTH ENDS THREADED)
- ⑩ 2" S.S. STREAM FLOW BALL VALVE MODEL BV150SSJPP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑪ AIR RELIEF VALVE ~~ARCO 143-1 OR 145-1~~ (AS REQUIRED) SANDBLASTED AND COATED COAL TAR EPOXY C-200 SHERWIN WILLIAMS OR EQUAL
- ⑫ 1" X CLOSE S.S. NIPPLE
- ⑬ 1" FULL PORT S.S. BALL VALVE
- ⑭ S.S. STREET 90 ~~ARCO 143-1 REQUIRES 1"~~ ~~ARCO 145-1 REQUIRES 2"~~

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI

3" LOW PRESSURE FORCE MAIN AIR RELIEF CHAMBER DETAIL



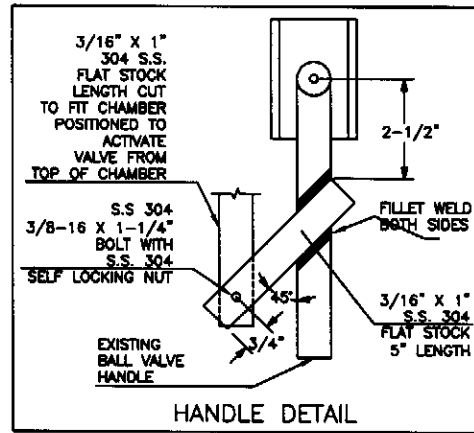
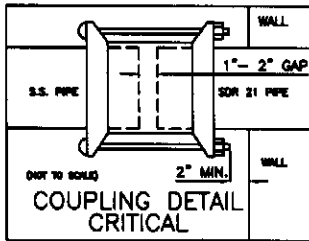
* NOTE: ACTUAL DIMENSION DEPENDS
UPON AIR RELEASE VALVE

AP00-143-1 33.6"
AP00-143-1 33.6"

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

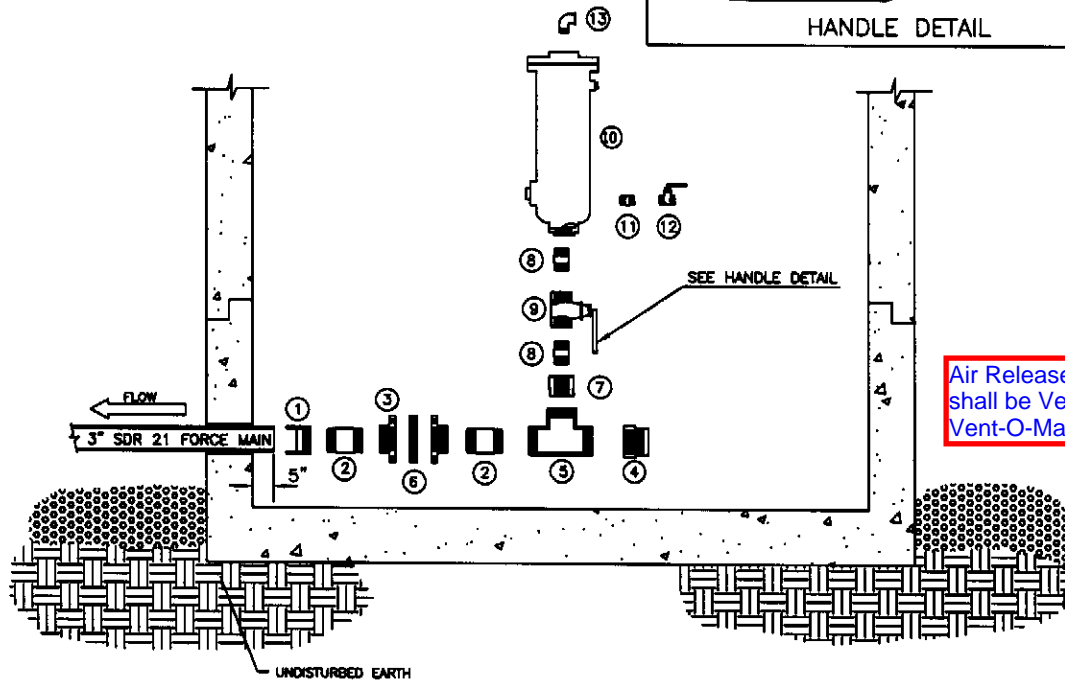
THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

3" LOW PRESSURE FORCE MAIN
TERMINAL AIR RELIEF CHAMBER



NOTES

- ① 3" SCHEDULE 40 PVC (PRESSURE) SOCKET X FEMALE ADAPTER
- ② 3" x 4" NIPPLE (BOTH ENDS THREADED)
- ③ 2ea. 3" THREADED FLANGES 7.5" x 1-3/16" TH. (150psi)
4ea. 5/8-11 S.S. HEXHEAD CAP SCREWS.
8ea. 5/8" S.S. FLATWASHERS.
4ea. 5/8" S.S. SPLITLOCK WASHERS
4ea. 5/8-11 S.S. HEXHEAD NUTS
- ④ 3" DIA. S.S. PIPE CAP
- ⑤ 3" x 3" x 3" THREADED TEE (150psi)
- ⑥ CARLOC OR NON-ASBESTOS GASKET 1/16" OR 1/8" TH.
- ⑦ 3" to 2" BUSHING
- ⑧ 2" x 3" NIPPLE (BOTH ENDS THREADED)
- ⑨ 2" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑩ AIR RELIEF VALVE ~~APCO 412.1 OR 412.1~~ (AS REQUIRED) SANDBLASTED AND COATED COAL TAR EPOXY C-200 SHERWIN WILLIAMS OR EQUAL
- ⑪ 1" x CLOSE S.S. NIPPLE
- ⑫ 1" FULL PORT S.S. BALL VALVE
- ⑬ S.S. STREET 90 ~~APCO 412.1 REQUIRED 1"~~ ~~APCO 412.1 REQUIRED 2"~~



Air Release Valves shall be Vent-Tech or Vent-O-Mat.

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

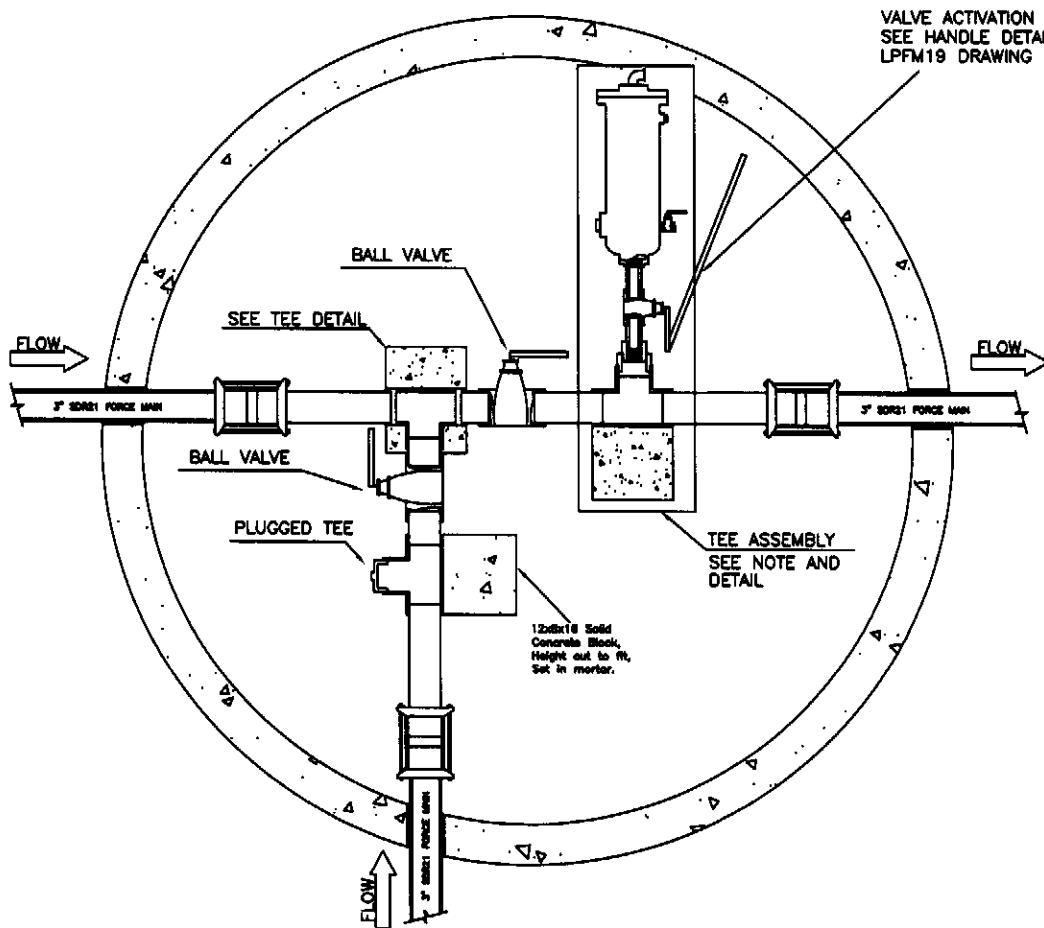
GENERAL NOTES:

- * ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

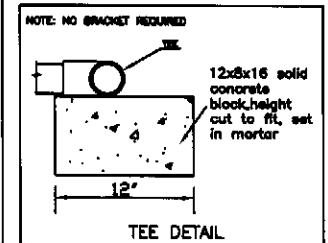
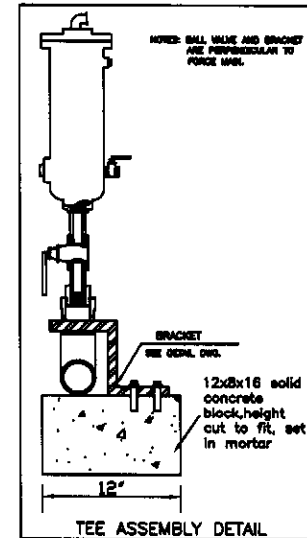
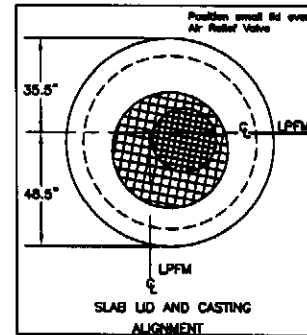
EXPLODED VIEW
NOT TO SCALE

THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

3" LOW PRESSURE FORCE MAIN
TERMINAL AIR RELIEF CHAMBER DETAIL



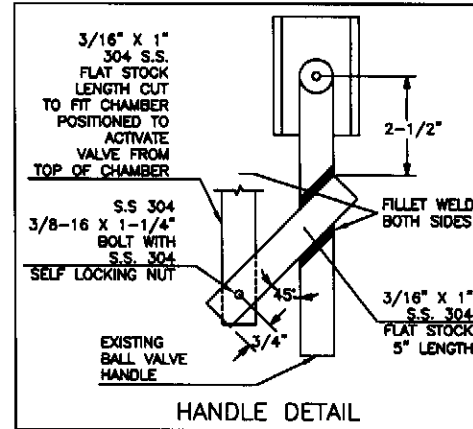
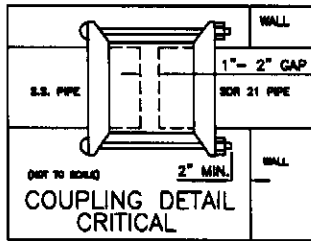
VALVE ACTIVATION ROD
SEE HANDLE DETAIL
LPFM19 DRAWING



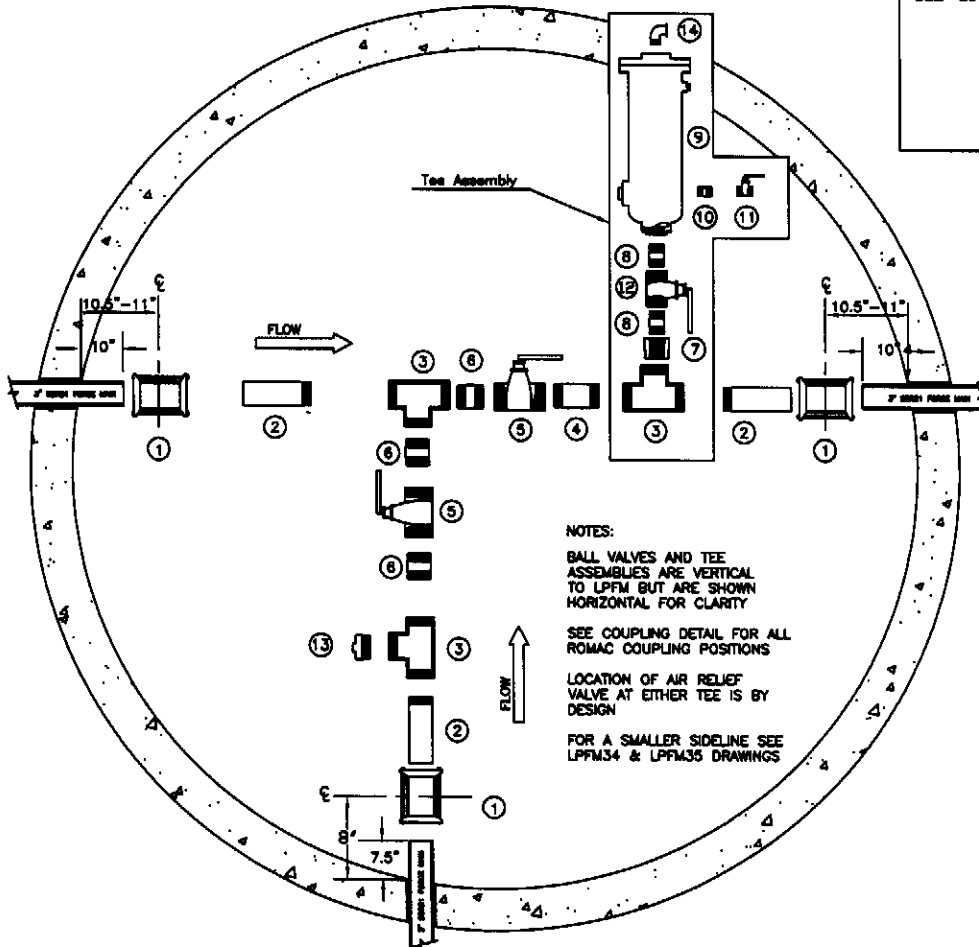
NOTE:
Ball Valves and Tee
Assemblies are
vertical to LPFM
but are shown
horizontal for clarity

THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

3" LOW PRESSURE FORCE MAIN
RIGHT TEE AIR RELIEF CHAMBER



- NOTES
- ① ROMAC PART # 511-3.50 X 3.50 X 7SSPE WITH NBR GASKETS
 - ② 3" x 32" PIPE (ONE END THREADED)
 - ③ 3" X 3" X 3" THREADED TEE (150psi)
 - ④ 3" x 7-1/4" PIPE (BOTH ENDS THREADED)
 - ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑥ 3" x 4" NIPPLE (BOTH ENDS THREADED)
 - ⑦ 3" to 2" BUSHING
 - ⑧ 2" x 3" NIPPLE (BOTH ENDS THREADED)
 - ⑨ AIR RELIEF VALVE ~~AP00-115.1 OR 115.1~~ (AS REQUIRED) SANDBLASTED AND COATED COAL TAR EPOXY C-200 SHERWIN WILLIAMS OR EQUAL
 - ⑩ 1" X CLOSE S. S. NIPPLE
 - ⑪ 1" FULL PORT S.S. BALL VALVE
 - ⑫ 2" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑬ 3" S.S. PIPE PLUG
 - ⑭ S.S. STREET 90 ~~AP00-115.1 REQUIRED~~ ~~AP00-115.1 REQUIRED - 3"~~



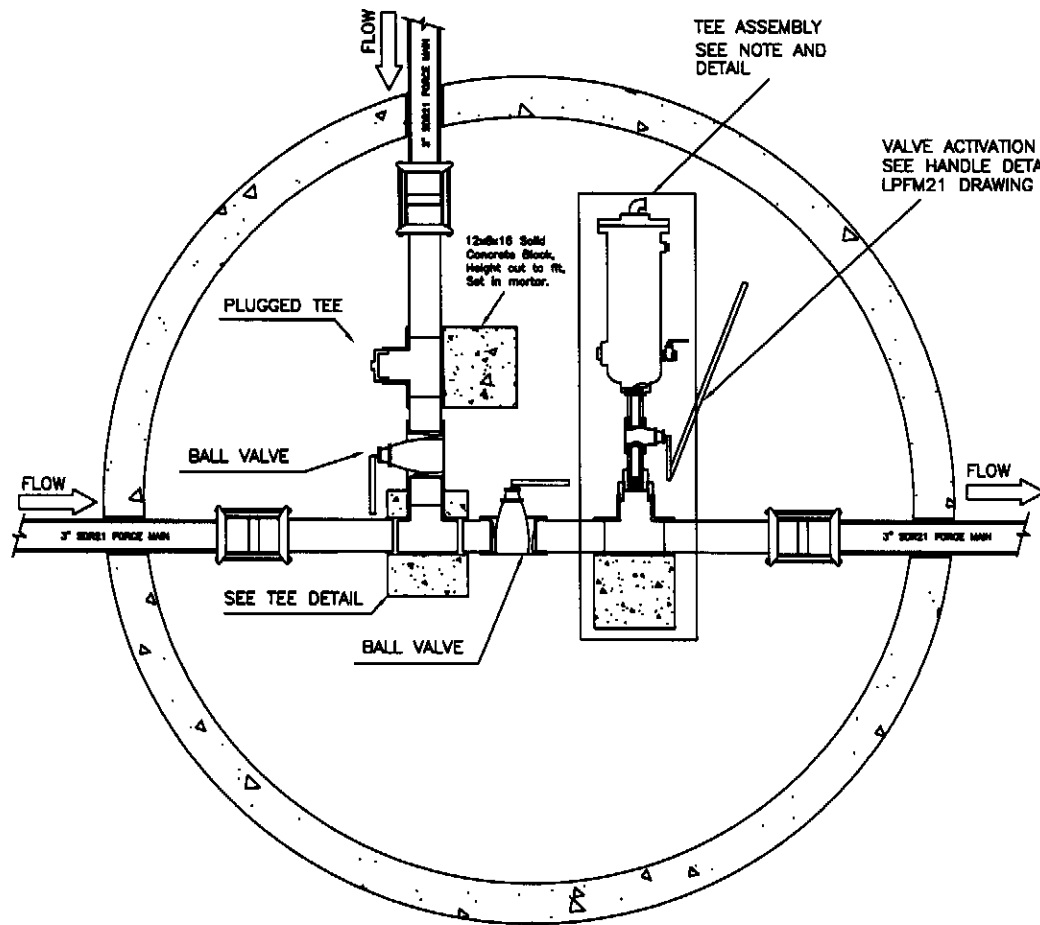
Air Release Valves shall be Vent-Tech or Vent-O-Mat.

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

GENERAL NOTES:
 * ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

EXPLODED TOP VIEW
 NOT TO SCALE

THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI
3" LOW PRESSURE FORCE MAIN RIGHT TEE AIR RELIEF CHAMBER DETAIL



TEE ASSEMBLY
SEE NOTE AND
DETAIL

VALVE ACTIVATION ROD
SEE HANDLE DETAIL
LPFM21 DRAWING

12x6x16 Solid
Concrete Block,
Height cut to fit,
Set in mortar.

PLUGGED TEE

BALL VALVE

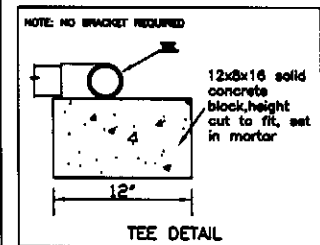
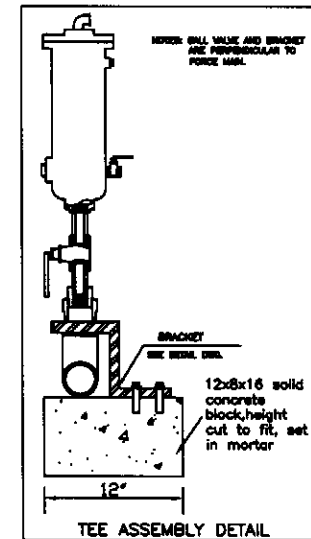
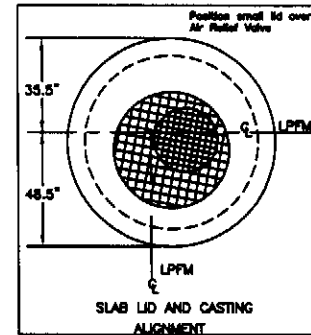
SEE TEE DETAIL

BALL VALVE

FLOW

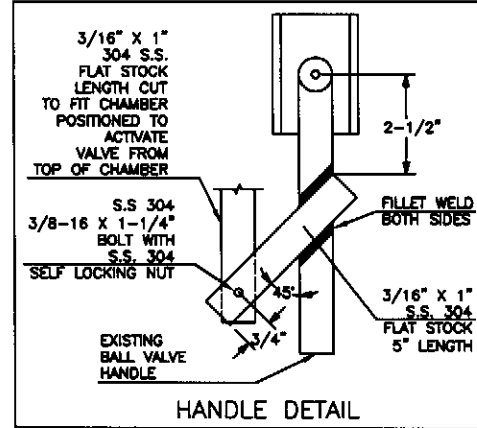
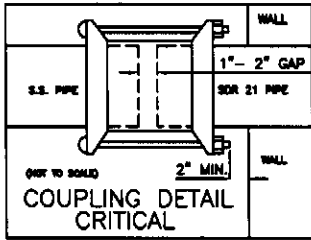
FLOW

NOTE:
Ball Valves and Tee
Assemblies are
vertical to LPFM
but are shown
horizontal for clarity



THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

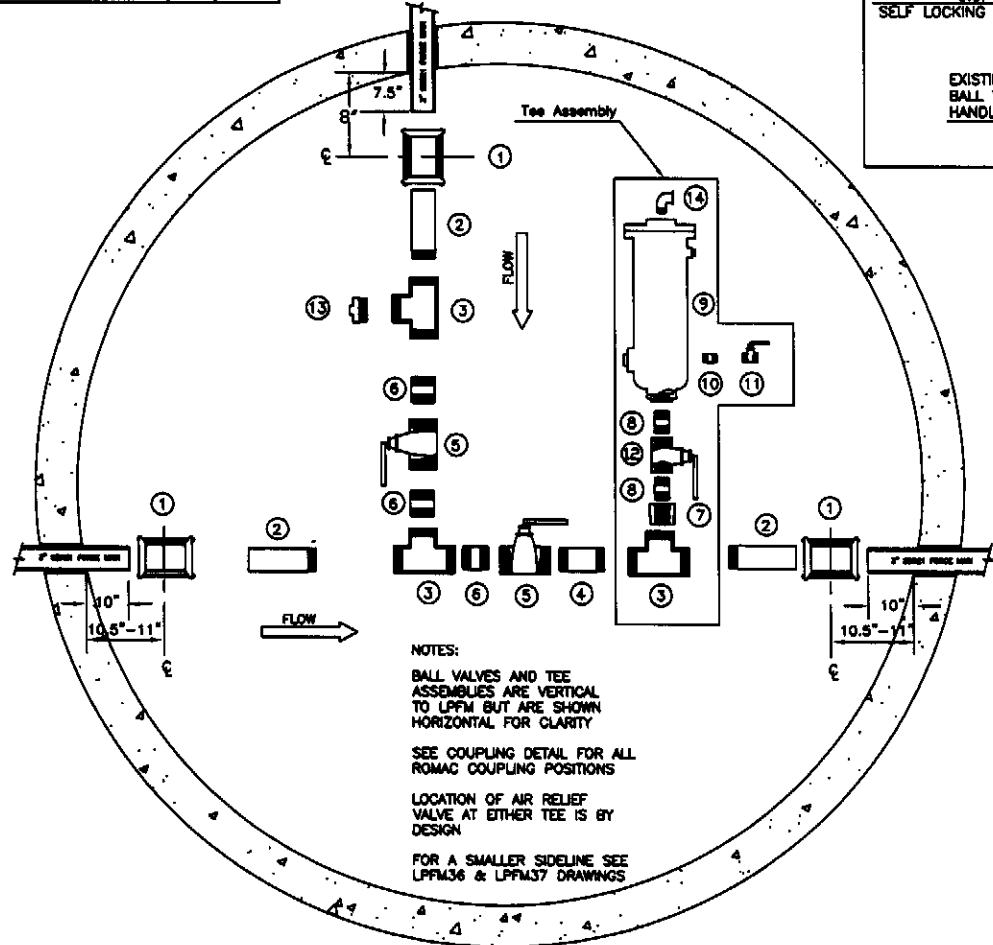
3" LOW PRESSURE FORCE MAIN
LEFT TEE AIR RELIEF CHAMBER



- NOTES
- ① ROMAC PART # S11-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
 - ② 3" x 32" PIPE (ONE END THREADED)
 - ③ 3" X 3" X 3" THREADED TEE (150psi)
 - ④ 3" x 7-1/4" PIPE (BOTH ENDS THREADED)
 - ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑥ 3" x 4" NIPPLE (BOTH ENDS THREADED)
 - ⑦ 3" to 2" BUSHING
 - ⑧ 2" x 3" NIPPLE (BOTH ENDS THREADED)
 - ⑨ AIR RELIEF VALVE ~~APCS 115.1 OR 116.1~~ (AS REQUIRED) SANDBLASTED AND COATED COAL TAR EPOXY C-200 SHERWIN WILLIAMS OR EQUAL
 - ⑩ 1" X CLOSE S. S. NIPPLE
 - ⑪ 1" FULL PORT S.S. BALL VALVE
 - ⑫ 2" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑬ 3" S.S. PIPE PLUG
 - ⑭ S.S. STREET 90 ~~APCS 115.1 REQUIRES~~ ~~ABCO 115.1 REQUIRES 2"~~

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

Air Release Valves shall be Vent-Tech or Vent-O-Mat.



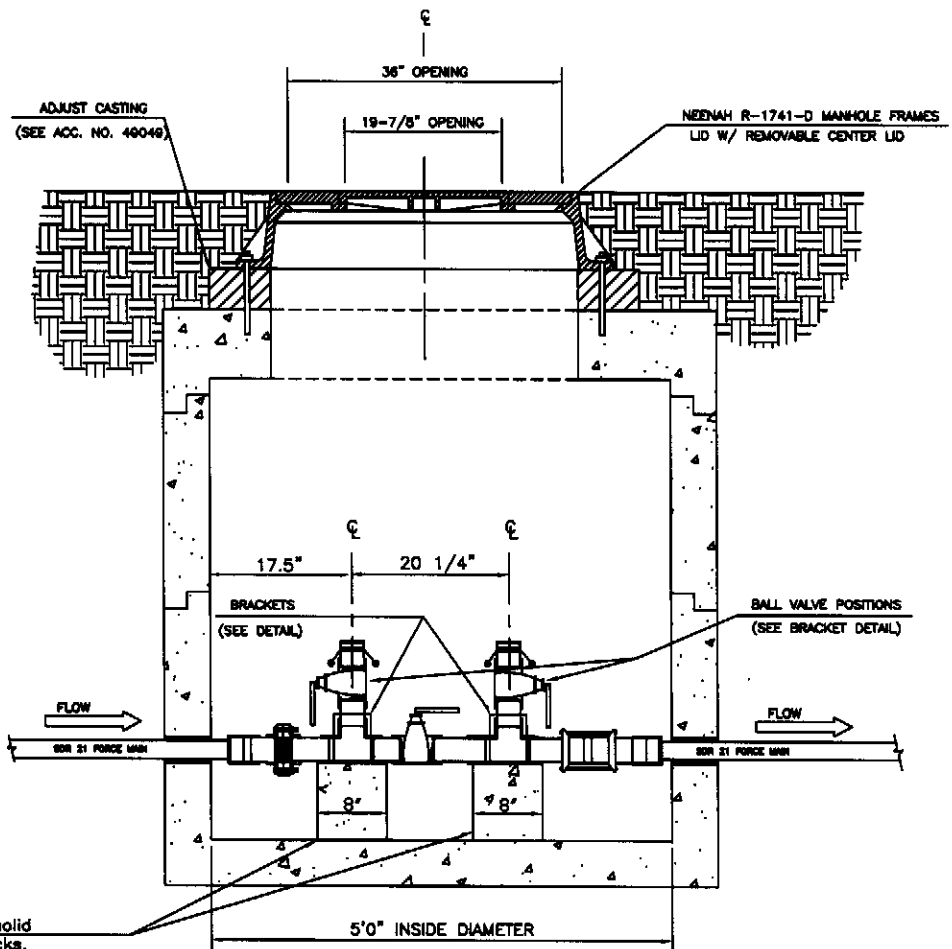
NOTES:
 BALL VALVES AND TEE ASSEMBLIES ARE VERTICAL TO LPPM BUT ARE SHOWN HORIZONTAL FOR CLARITY
 SEE COUPLING DETAIL FOR ALL ROMAC COUPLING POSITIONS
 LOCATION OF AIR RELIEF VALVE AT EITHER TEE IS BY DESIGN
 FOR A SMALLER SIDELINE SEE LPPM36 & LPPM37 DRAWINGS

EXPLODED TOP VIEW
 NOT TO SCALE

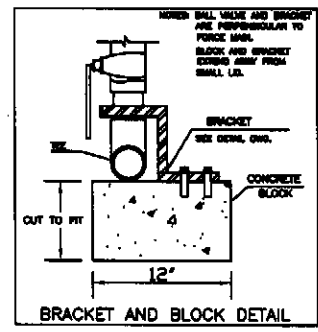
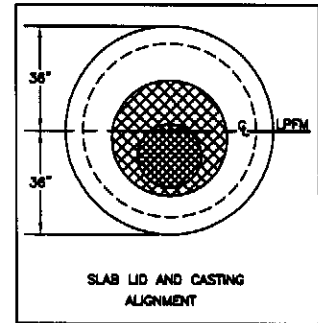
THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI

**3" LOW PRESSURE FORCE MAIN
 LEFT TEE AIR RELIEF CHAMBER DETAIL**

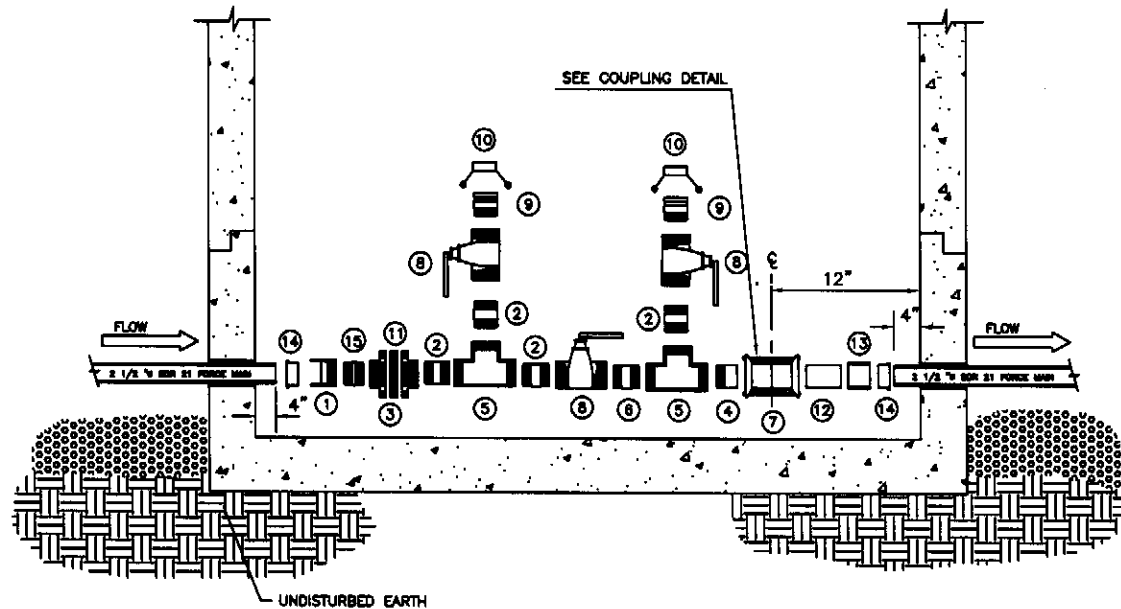
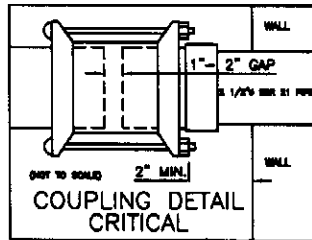
GENERAL NOTES:
 * ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)



2-12x8x16 solid concrete blocks, height cut to fit, set in mortar



THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI
 1" TO 2 1/2" LOW PRESSURE FORCE MAIN FLUSHING CHAMBER



GENERAL NOTES:
 * ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

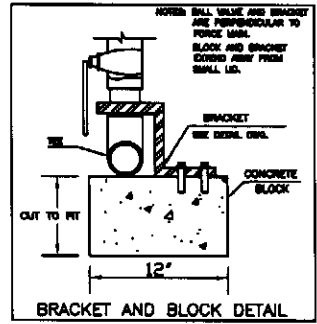
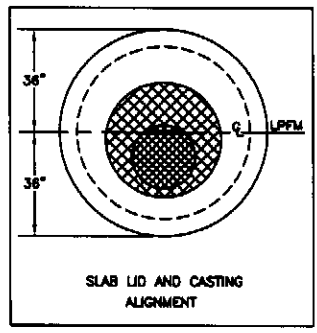
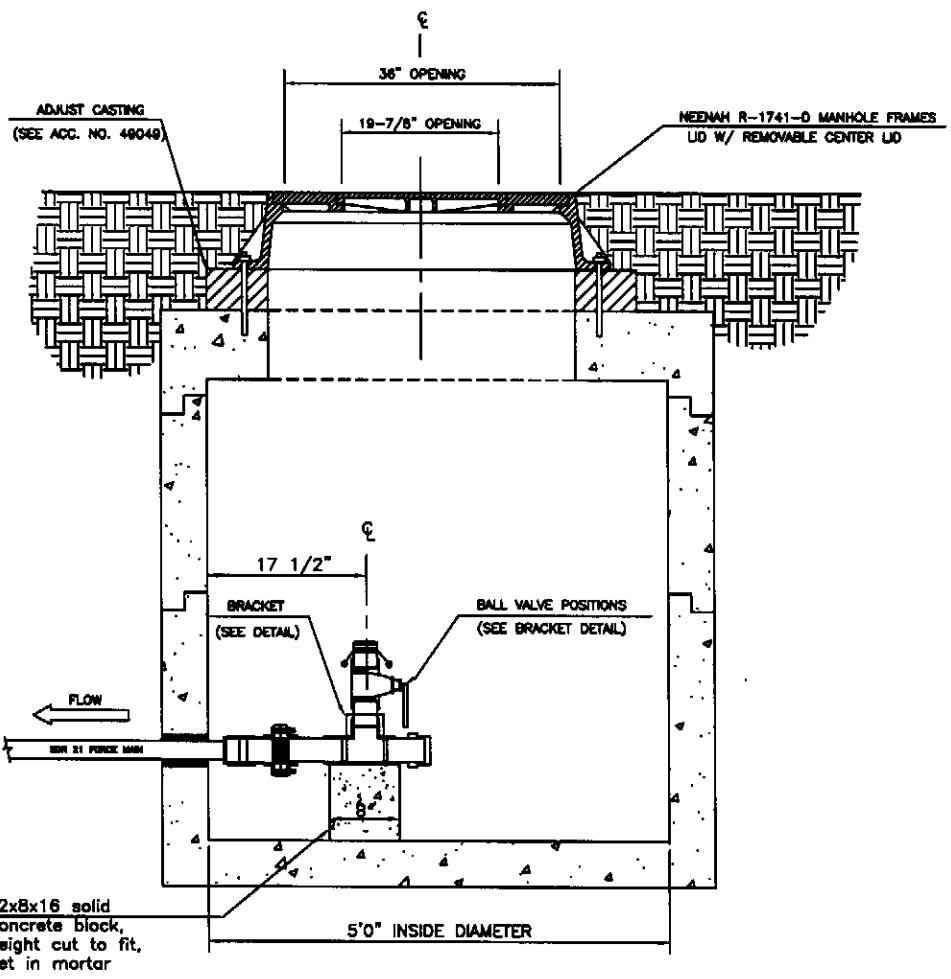
EXPLODED VIEW
 NOT TO SCALE

NOTES

- ① 3" SCHEDULE 40 PVC (PRESSURE) SOCKET X FEMALE ADAPTER
- ② 3" X 4" NIPPLE (BOTH ENDS THREADED)
- ③ 2ea. 3" THREADED FLANGES 7.5" X 1-3/16" TH. (150psi)
 4ea. 5/8-11 S.S. HEXHEAD CAP SCREWS.
 8ea. 5/8" S.S. FLATWASHERS.
 4ea. 5/8" S.S. SPLITLOCK WASHERS
 4ea. 5/8-11 S.S. HEXHEAD NUTS
- ④ 3"-10.5" PIPE (ONE END THREADED)
- ⑤ 3" X 3" X 3" THREADED TEE (150psi)
- ⑥ 3" X 7-1/4" PIPE (BOTH ENDS THREADED)
- ⑦ ROMAC PART# 511-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
- ⑧ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑨ 3" CAM & GROOVE MALE ADAPTOR BY 3" MALE N.P.T. (BRASS)
- ⑩ 3" CAM & GROOVE DUST CAP (BRASS)
- ⑪ GASKET 1/16" OR 1/8" THICK GARLOC OR NON-ASBESTOS
- ⑫ 3" X 7" SDR21 PVC PIPE
- ⑬ 3" SCHEDULE 40 PVC SOCKET GLUE COUPLING
- ⑭ 3" X (1" TO 2 1/2") SCHEDULE 40 PVC SOCKET BUSHING
- ⑮ 3" X CLOSE NIPPLE (BOTH ENDS THREADED)

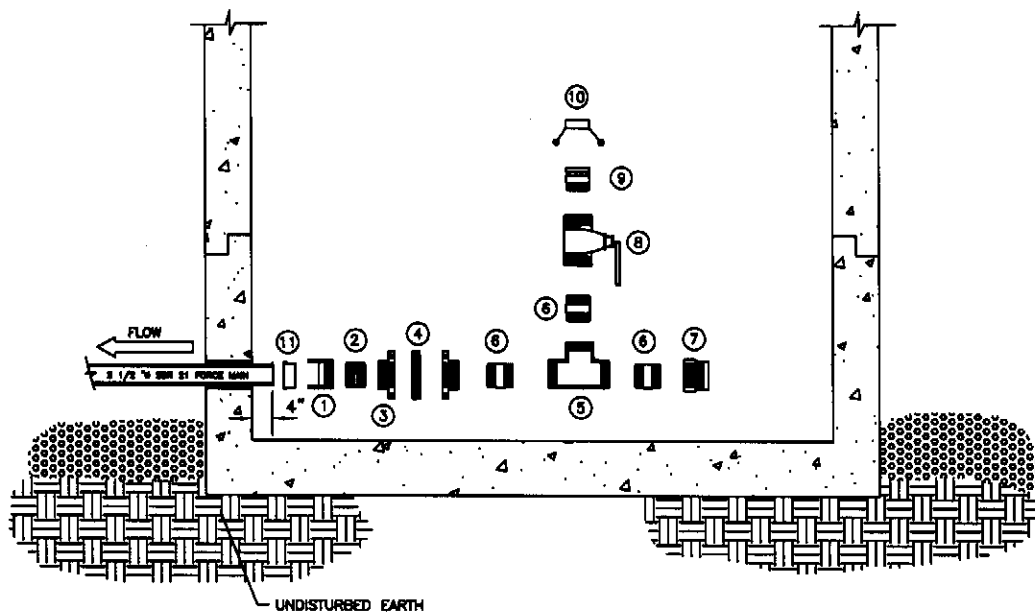
THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI

1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 FLUSHING CHAMBER DETAIL



THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI

1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 TERMINAL FLUSHING CHAMBER



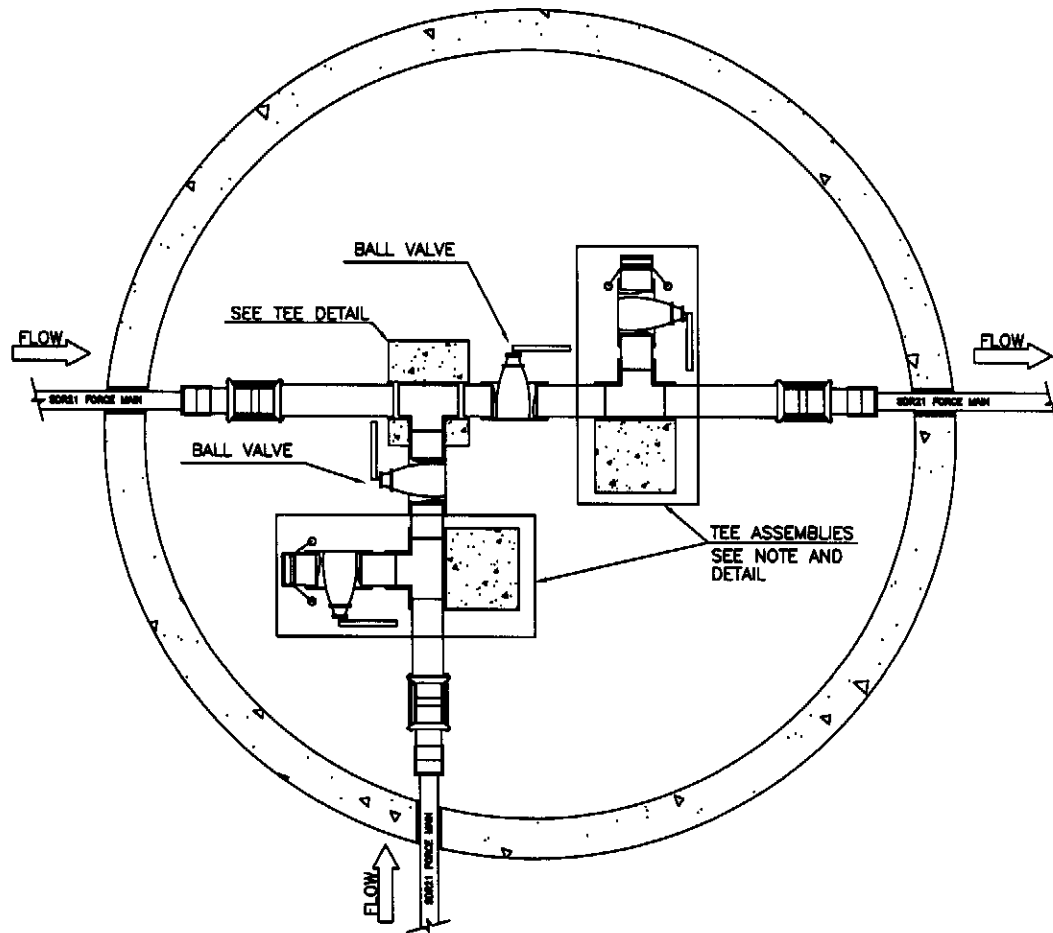
NOTES

- ① 3" SCHEDULE 40 PVC (PRESSURE) SOCKET X FEMALE ADAPTER
- ② 3" X CLOSE NIPPLE (BOTH ENDS THREADED)
- ③ 2ea. 3" THREADED FLANGES
7.5" X 1-3/16" TH. (150psi)
4ea. 5/8"-11 S.S. HEXHEAD CAP SCREWS
8ea. 5/8" S.S. FLATWASHERS
4ea. 5/8" S.S. SPLITLOCK WASHERS
4ea. 5/8"-11 S.S. HEXHEAD NUTS
- ④ GASKET 1/16" OR 1/8" TH. GARLOC OR NON-ASBESTOS
- ⑤ 3" X 3" X 3" THREADED TEE (150psi)
- ⑥ 3" X 7-1/4" PIPE (BOTH ENDS THREADED)
- ⑦ 3" S.S. PIPE CAP
- ⑧ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑨ 3" CAM & GROOVE MALE ADAPTOR BY 3" MALE N.P.T. (BRASS)
- ⑩ 3" CAM & GROOVE DUST CAP (BRASS)
- ⑪ 3" X (1" TO 2 1/2") SCHEDULE 40 PVC SOCKET BUSHING

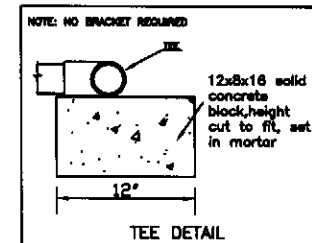
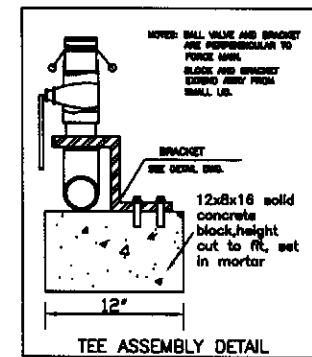
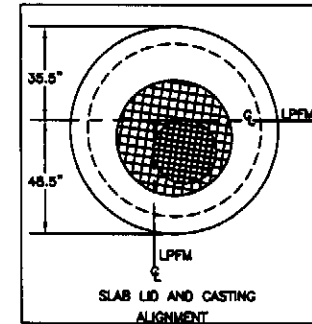
GENERAL NOTES:
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EXPLODED VIEW
 NOT TO SCALE

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI
 1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 TERMINAL FLUSHING CHAMBER DETAIL

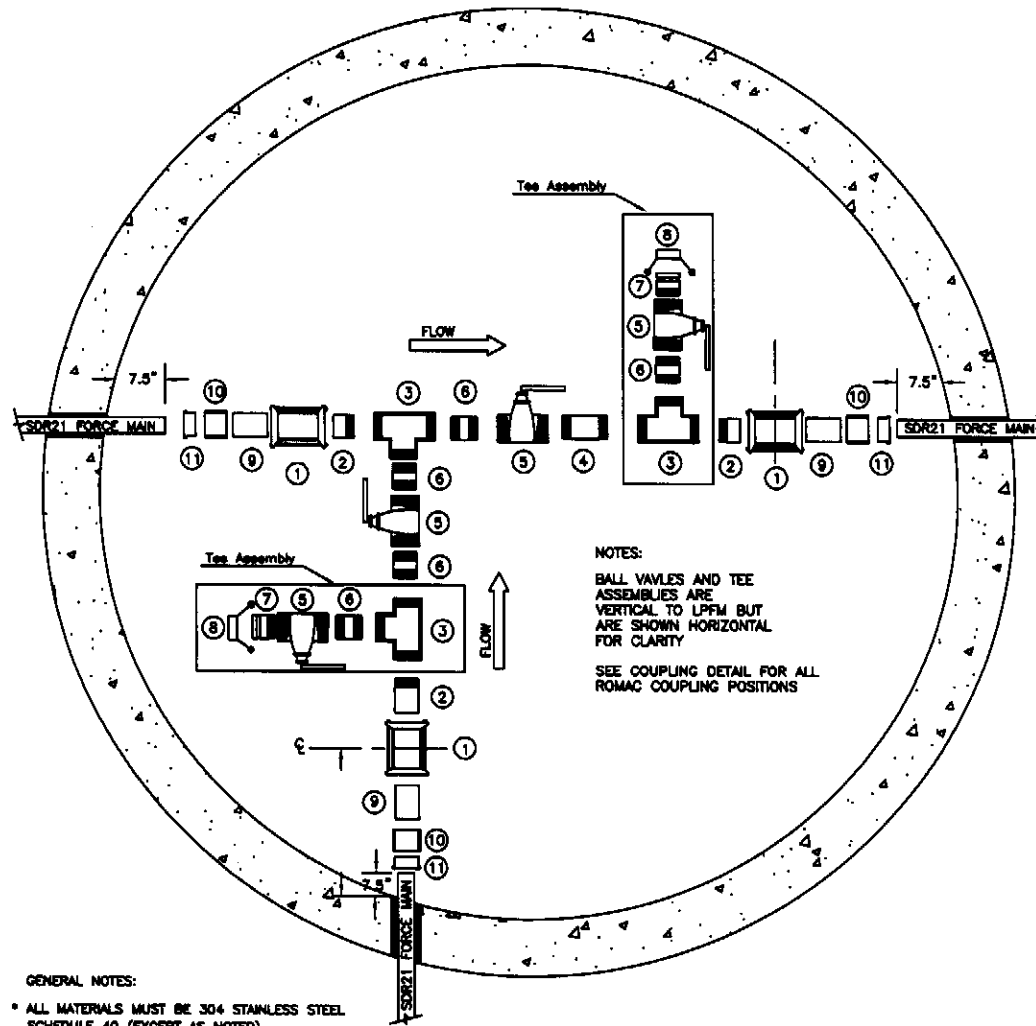


NOTE:
BALL VALVE AND TEE
ASSEMBLIES ARE
VERTICAL TO LPPFM
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CLARITY



THE
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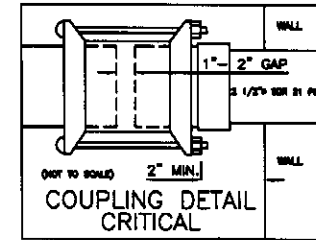
1" TO 2 1/2" LOW
PRESSURE FORCE MAIN
RIGHT TEE FLUSHING CHAMBER



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NOTES:
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 SEE COUPLING DETAIL FOR ALL ROMAC COUPLING POSITIONS

EXPLODED TOP VIEW
 NOT TO SCALE

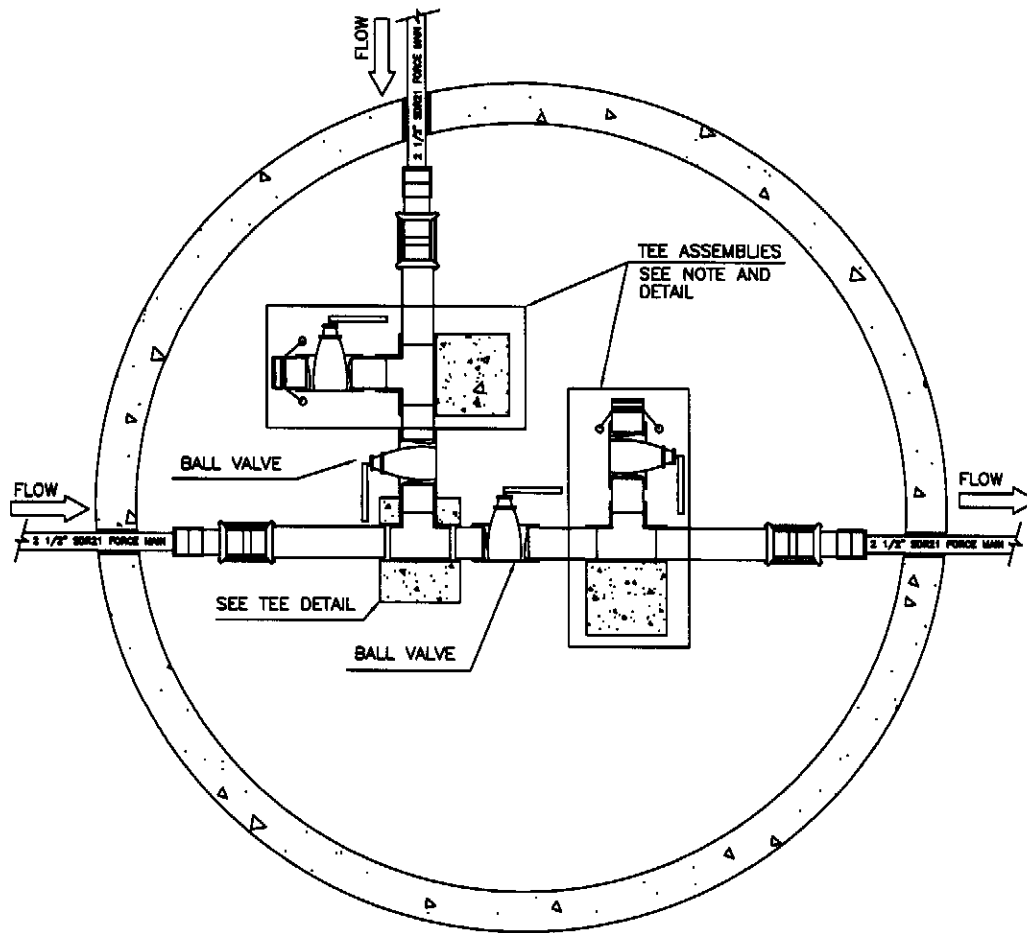


NOTES

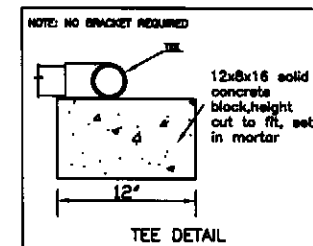
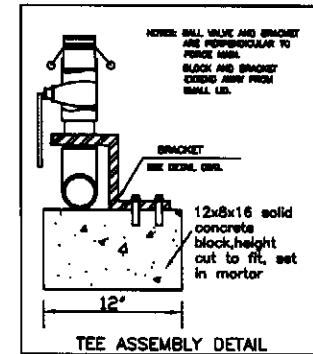
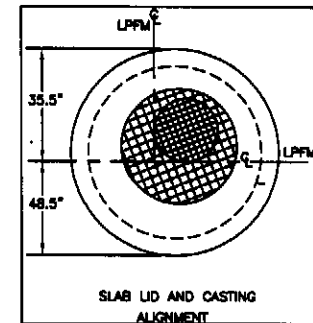
- ① ROMAC PART# 511-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
- ② 3" X 21" PIPE (ONE END THREADED)
- ③ 3" X 3" X 3" THREADED TEE (150psi)
- ④ 3" X 7-1/4" PIPE (BOTH ENDS THREADED)
- ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑥ 3" X 4" NIPPLE (BOTH ENDS THREADED)
- ⑦ 3" CAM & GROOVE MALE ADAPTOR BY 3" MALE N.P.T. (BRASS)
- ⑧ 3" CAM & GROOVE DUST CAP (BRASS)
- ⑨ 3" X 10" SDR21 PVC PIPE
- ⑩ 3" SCHEDULE 40 PVC SOCKET GLUE COUPLING
- ⑪ 3" X (1" TO 2-1/2") SCHEDULE 40 PVC SOCKET BUSHING

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI

1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 RIGHT TEE FLUSHING CHAMBER DETAIL

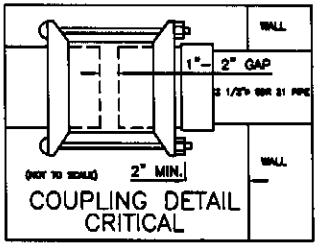
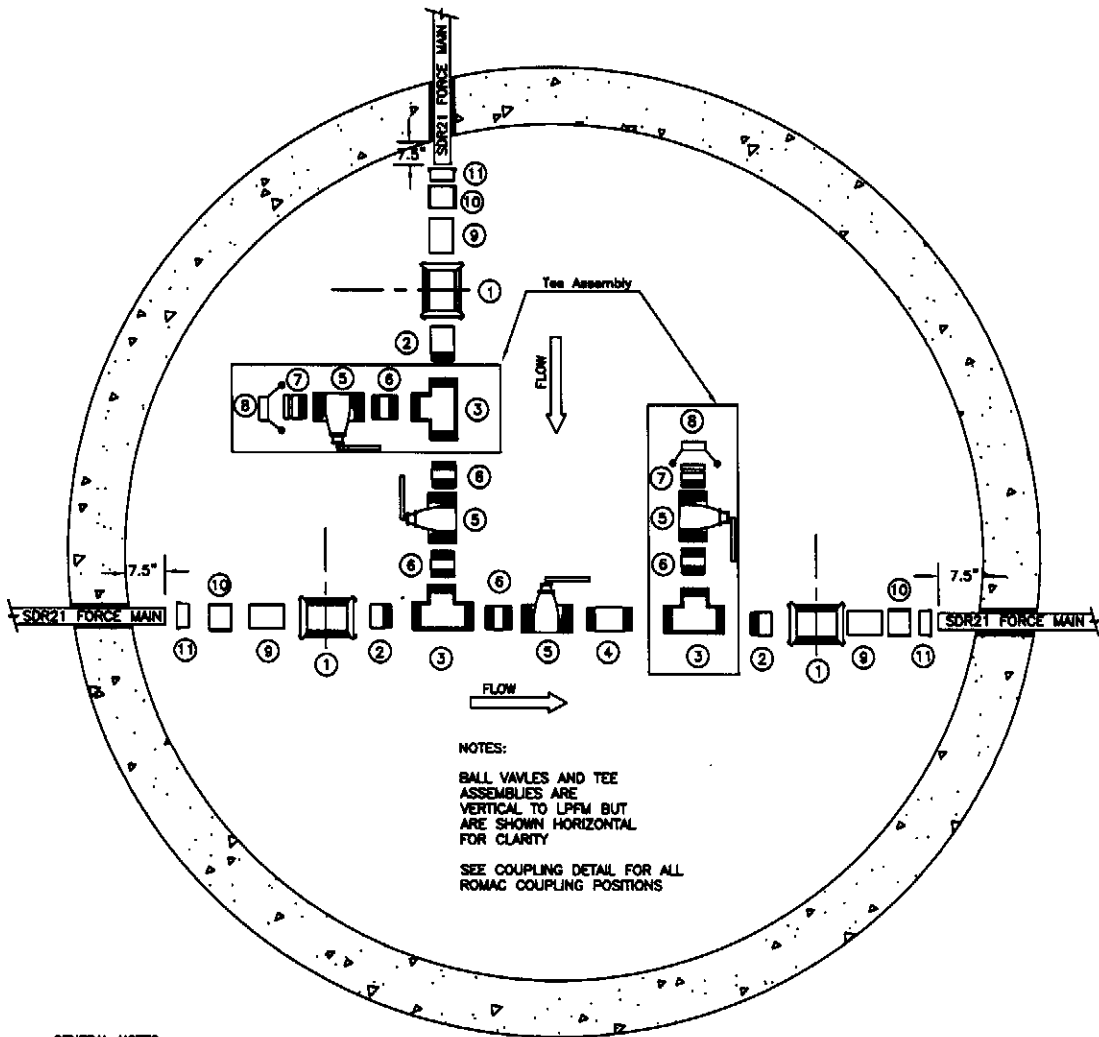


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THE
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GREATER CINCINNATI

1" TO 2 1/2" LOW
PRESSURE FORCE MAIN
LEFT TEE FLUSHING CHAMBER



NOTES

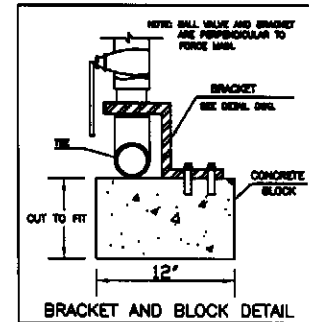
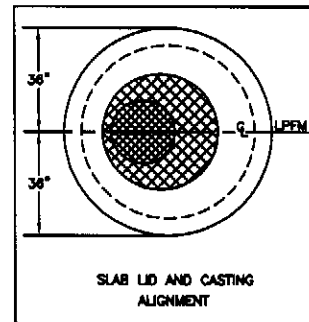
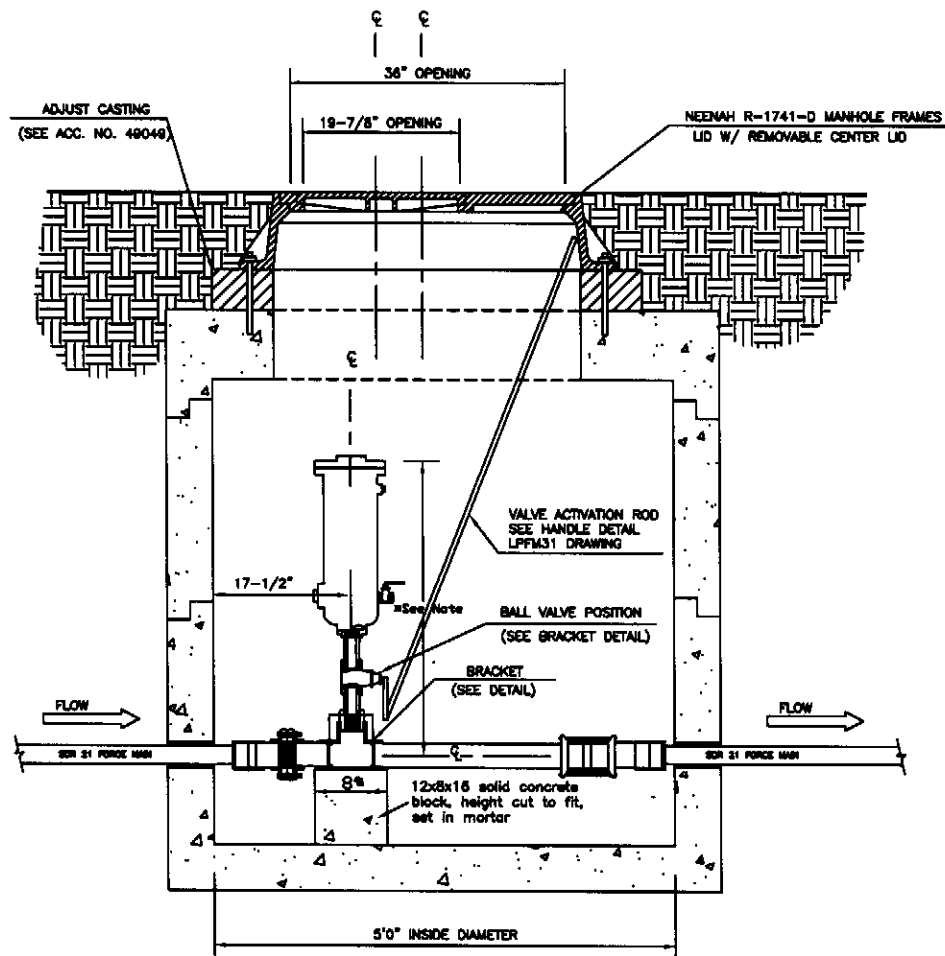
- ① ROMAC PART# 511-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
- ② 3" X 21" PIPE (ONE END THREADED)
- ③ 3" X 3" X 3" THREADED TEE (150psi)
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- ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑥ 3" X 4" NIPPLE (BOTH ENDS THREADED)
- ⑦ 3" CAM & GROOVE MALE ADAPTOR BY 3" MALE N.P.T. (BRASS)
- ⑧ 3" CAM & GROOVE DUST CAP (BRASS)
- ⑨ 3" X 10" SDR21 PVC PIPE
- ⑩ 3" SCHEDULE 40 PVC SOCKET GLUE COUPLING
- ⑪ 3" X (1" TO 2-1/2") SCHEDULE 40 PVC SOCKET BUSHING

NOTES:
 BALL VALVES AND TEE ASSEMBLIES ARE VERTICAL TO LPFM BUT ARE SHOWN HORIZONTAL FOR CLARITY
 SEE COUPLING DETAIL FOR ALL ROMAC COUPLING POSITIONS

GENERAL NOTES:
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EXPLODED TOP VIEW
 NOT TO SCALE

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI
 1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 LEFT TEE FLUSHING CHAMBER DETAIL

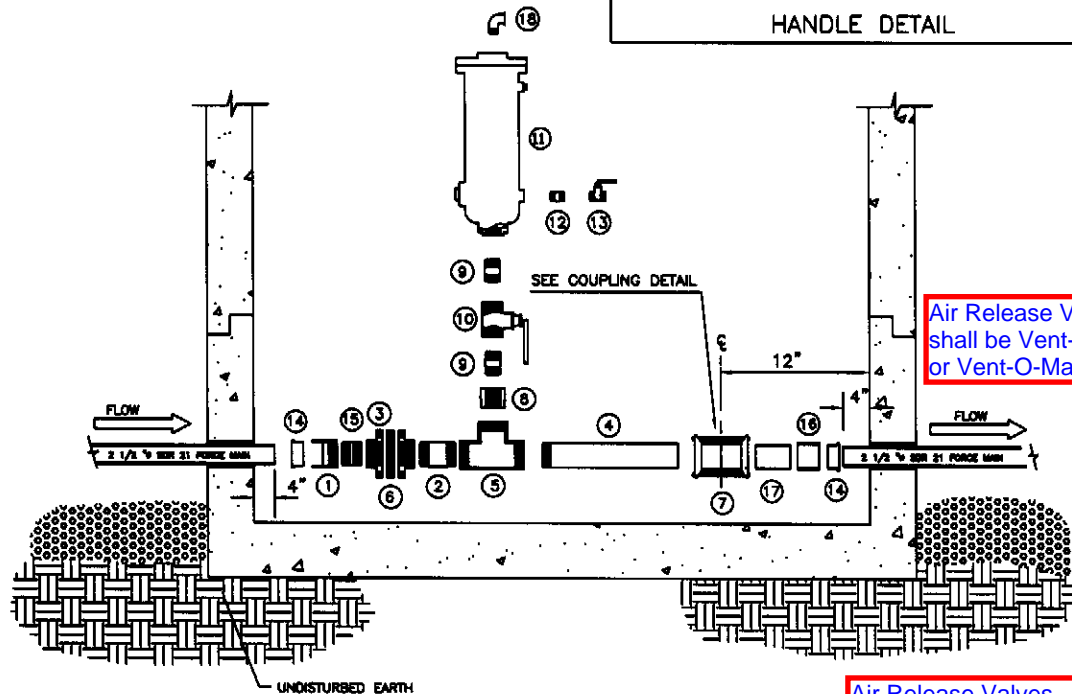
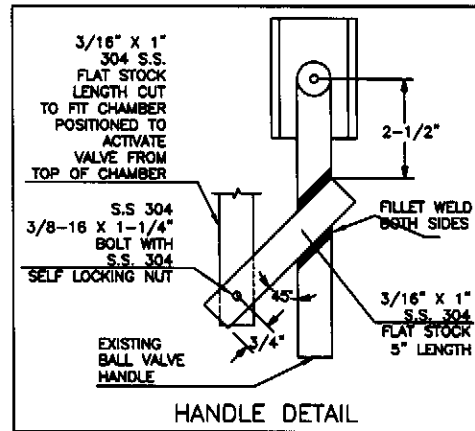
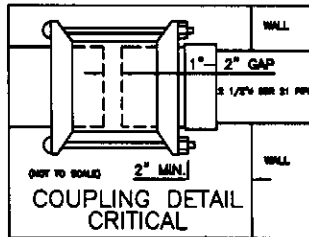


* NOTE: ACTUAL DIMENSION DEPENDS UPON AIR RELEASE VALVE.

~~APCC 443.4 30.6"~~
~~APCC 443.4 33.5"~~

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI
 1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 AIR RELIEF CHAMBER



GENERAL NOTES:
 * ALL MATERIALS MUST BE 304 STAINLESS STEEL
 SCHEDULE 40 (EXCEPT AS NOTED)

EXPLODED VIEW
 NOT TO SCALE

NOTES

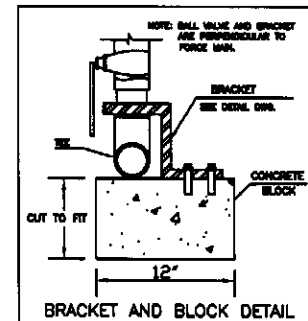
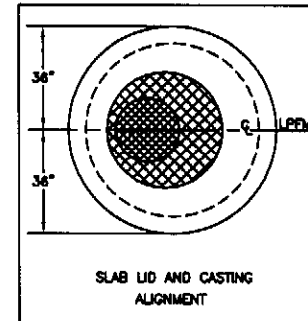
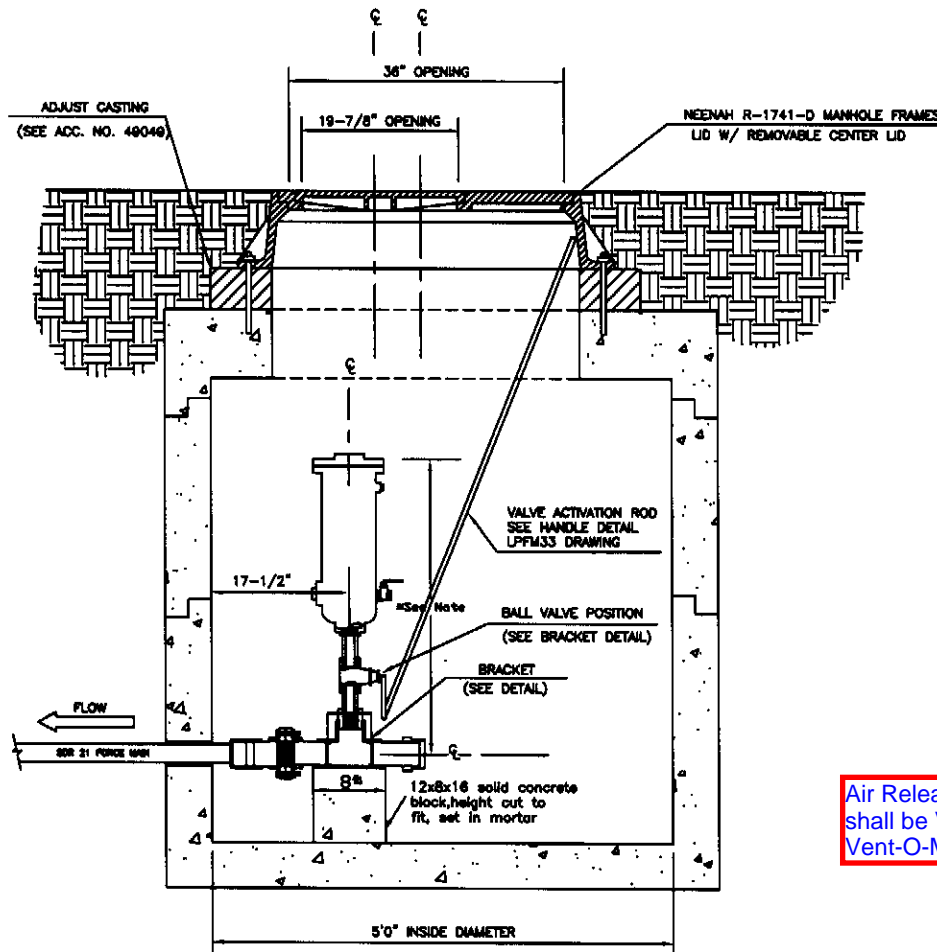
- ① 3" SCHEDULE 40 PVC (PRESSURE) SOCKET X FEMALE ADAPTOR
- ② 3" x 4" NIPPLE (BOTH ENDS THREADED)
- ③ 2ea. 3" THREADED FLANGES 7.5" x 1-3/16" TH. (150psi)
 4ea. 5/8-11 S.S. HEXHEAD CAP SCREWS.
 8ea. 5/8" S.S. FLATWASHERS.
 4ea. 5/8" S.S. SPLITLOCK WASHERS
 4ea. 5/8-11 S.S. HEXHEAD NUTS
- ④ 3" x 20-1/4" PIPE (ONE END THREADED)
- ⑤ 3" x 3" x 3" THREADED TEE (150psi)
- ⑥ CARLOC OR NON-ASBESTOS GASKET 1/16" OR 1/8" TH.
- ⑦ ROMAC PART # 511-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
- ⑧ 3" to 2" BUSHING
- ⑨ 2" x 3" NIPPLE (BOTH ENDS THREADED)
- ⑩ 2" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑪ AIR RELIEF VALVE ~~APCO 443-1 OR 445-1~~
 (AS REQUIRED)
 SANDBLASTED AND COATED
 COAL TAR EPOXY C-200
 SHERWIN WILLIAMS OR EQUAL
- ⑫ 1" x CLOSE S.S. NIPPLE
- ⑬ 1" FULL POST S.S. BALL VALVE
- ⑭ 3" x (1" TO 2-1/2") SCHEDULE 40 PVC SOCKET BUSHING
- ⑮ 3" x CLOSE NIPPLE (BOTH ENDS THREADED)
- ⑯ 3" SCHEDULE 40 PVC SOCKET GLUE COUPLING
- ⑰ 3" x 7" SDR21 PVC PIPE
- ⑱ S.S. STREET 90 ~~APCO 443-1 REQUIRES 1"~~
~~APCO 445-1 REQUIRES 2"~~

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI

1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 AIR RELIEF CHAMBER

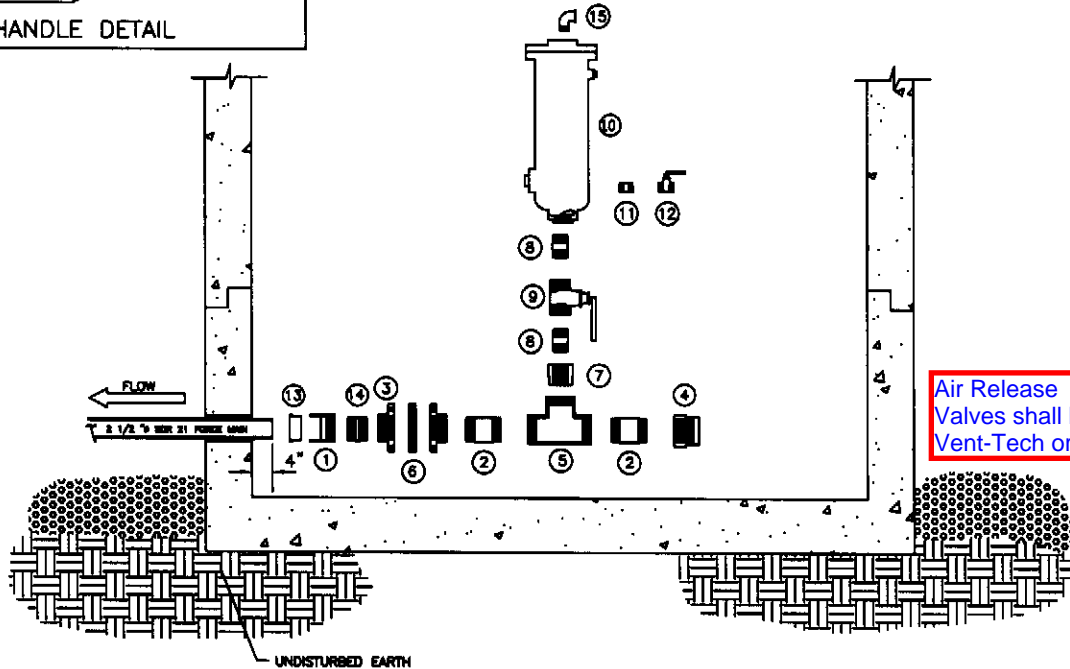
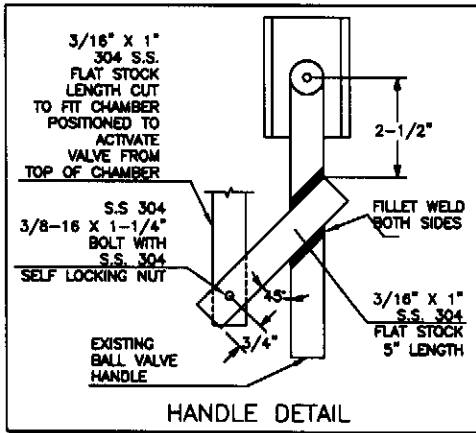


* NOTE: ACTUAL DIMENSION DEPENDS UPON AIR RELEASE VALVE.

~~ARCO 145.1 36.0"~~
~~ARCO 145.1 33.5"~~

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

THE
 METROPOLITAN SEWER DISTRICT
 OF
 GREATER CINCINNATI
 1" TO 2 1/2" LOW
 PRESSURE FORCE MAIN
 TERMINAL AIR RELIEF CHAMBER



NOTES

- ① 3" SCHEDULE 40 PVC (PRESSURE) SOCKET X FEMALE ADAPTER
- ② 3/8" X 4" NIPPLE (BOTH ENDS THREADED)
- ③ 2EA. 3" THREADED FLANGES 7.5" X 1-3/16" TH (150 PSI)
4EA. 5/8-11 S.S. HEXHEAD CAP SCREWS
8EA. 3/8" S.S. FLATWASHERS
4EA. 5/8" S.S. SPLITLOCK WASHERS
4EA. 5/8-11 S.S. HEXHEAD NUTS
- ④ 3" S.S. PIPE CAP
- ⑤ 3"X3"X3" THREADED TEE (150 PSI)
- ⑥ GASKET 1/16" OR 1/8" THICK GARLOC OR NON-ASBESTOS
- ⑦ 3" TO 2" BUSHING
- ⑧ 2" X 3" NIPPLE (BOTH ENDS THREADED)
- ⑨ 2" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
- ⑩ AIR RELIEF VALVE ~~ARCO 445-1 OR 445-1~~ (AS REQUIRED) SANDBLASTED AND COATED COAL TAR EPOXY C-200 SHERWIN WILLIAMS OF EQUAL
- ⑪ 1" X CLOSE S.S. NIPPLE
- ⑫ 1" FULL PORT S.S. BALL VALVE
- ⑬ 3" X (1" DIA TO 2-1/2") SCHEDULE 40 PVC SOCKET BUSHING
- ⑭ 3" X CLOSE NIPPLE (BOTH ENDS THREADED)
- ⑮ S.S. STREET 90 ~~ARCO 445-1 REQUIRED 1"~~ ~~ARCO 445-1 REQUIRED 2"~~

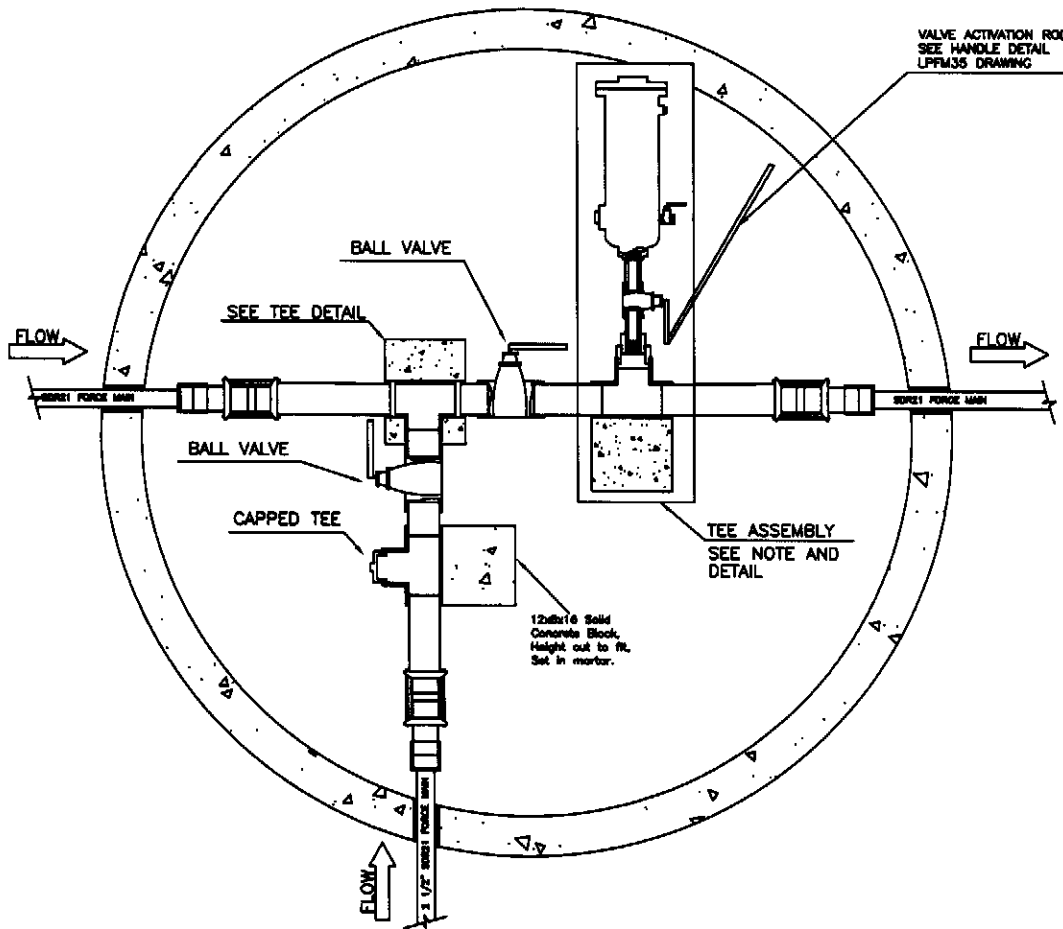
Air Release Valves shall be Vent-Tech or

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

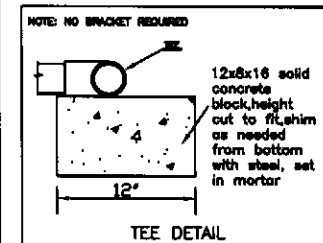
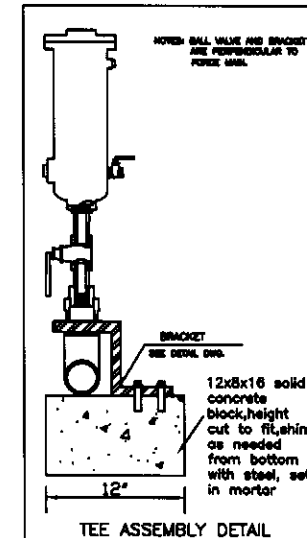
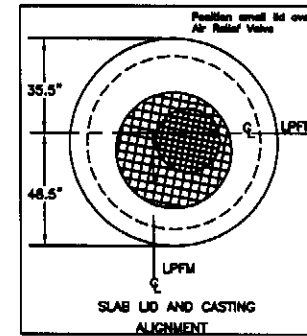
- GENERAL NOTES:
- ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)
 - BALL VALVE MUST BE FULL PORT 150psi WSP 500psi WOG (NON-SHOCK)

THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

1" TO 2 1/2" LOW
PRESSURE FORCE MAIN
TERMINAL AIR RELIEF CHAMBER DETAIL

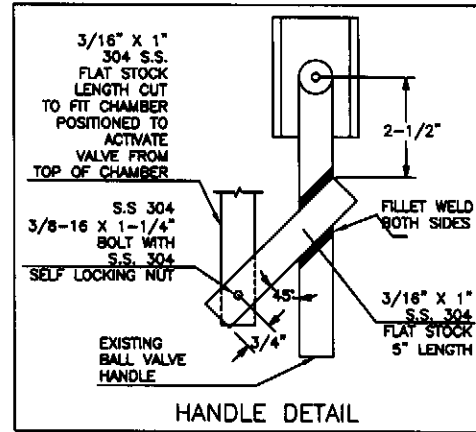
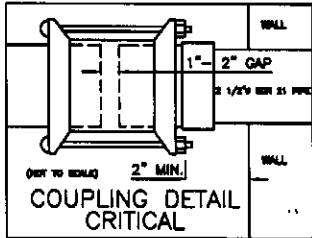


NOTE:
BALL VALVES AND TEE
ASSEMBLIES ARE
VERTICAL TO LPPM BUT
ARE SHOWN HORIZONTAL
FOR CLARITY



THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI

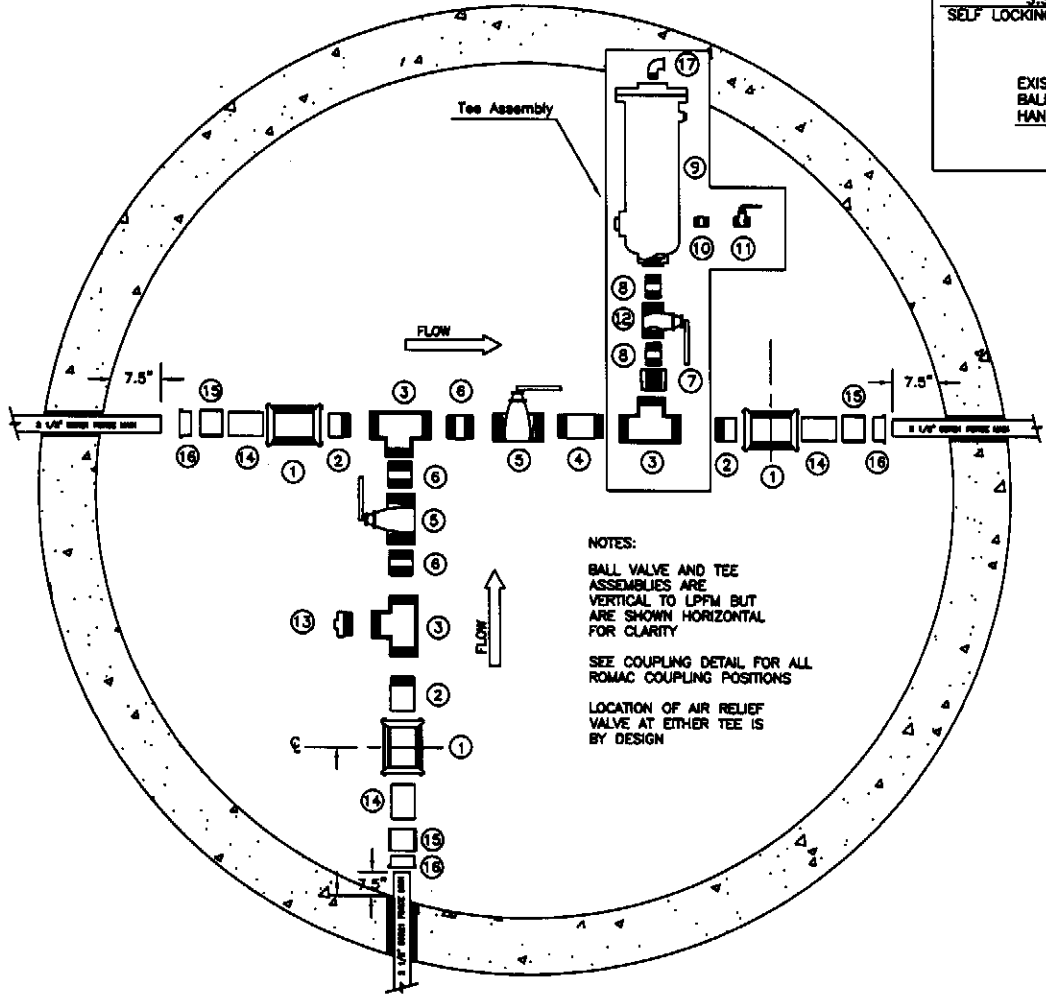
1" TO 2 1/2" LOW
PRESSURE FORCE MAIN
RIGHT TEE AIR RELIEF CHAMBER



- NOTES
- ① ROMAC PART # S11-3.50 X 3.50 X 7SSPE WITH NBR GASKETS
 - ② 3/8" X 21" PIPE (ONE END THREADED)
 - ③ 3"x3"x3" THREADED TEE (150 PSI)
 - ④ 3/8" X 7-1/4" PIPE (BOTH ENDS THREADED)
 - ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑥ 3/8" X 4" NIPPLE (BOTH ENDS THREADED)
 - ⑦ 3/8" TO 2" BUSHING
 - ⑧ 2" X 3" NIPPLE (BOTH ENDS THREADED)
 - ⑨ AIR RELIEF VALVE ~~APCC 115-1 OR 115-1~~ (AS REQUIRED) SANDBLASTED AND COATED COAL TAR EPOXY C-200 SHERWIN WILLIAMS OF EQUAL
 - ⑩ 1" X CLOSE S.S. NIPPLE
 - ⑪ 1" FULL PORT S.S. BALL VALVE
 - ⑫ 2" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑬ 3" S.S. PIPE PLUG
 - ⑭ 3/8" X 10" SDR21 PVC PIPE
 - ⑮ 3/8" SCHEDULE 40 PVC SOCKET GLUE COUPLING
 - ⑯ 3/8" X (1" TO 2-1/2") SCHEDULE 40 PVC SOCKET BUSHING
 - ⑰ S.S. STREET 90 ~~APCC 115-1 REQUIRED~~ ~~APCC 115-1 REQUIRED~~

Air Release Valves shall be Vent-Tech or Vent-O-Mat.

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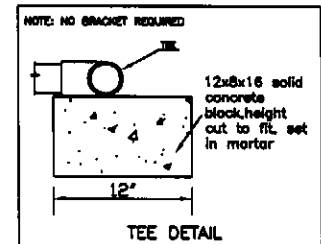
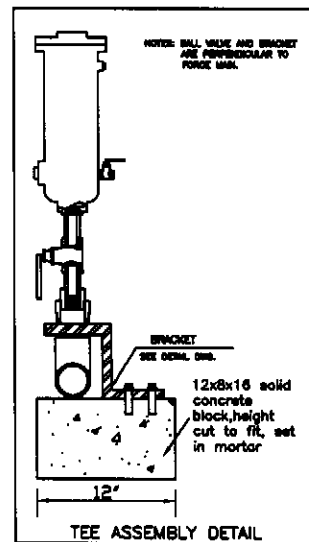
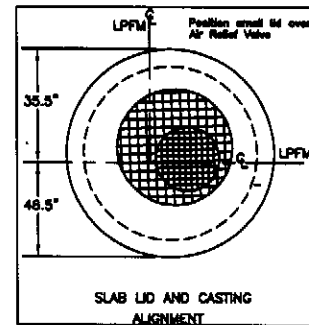
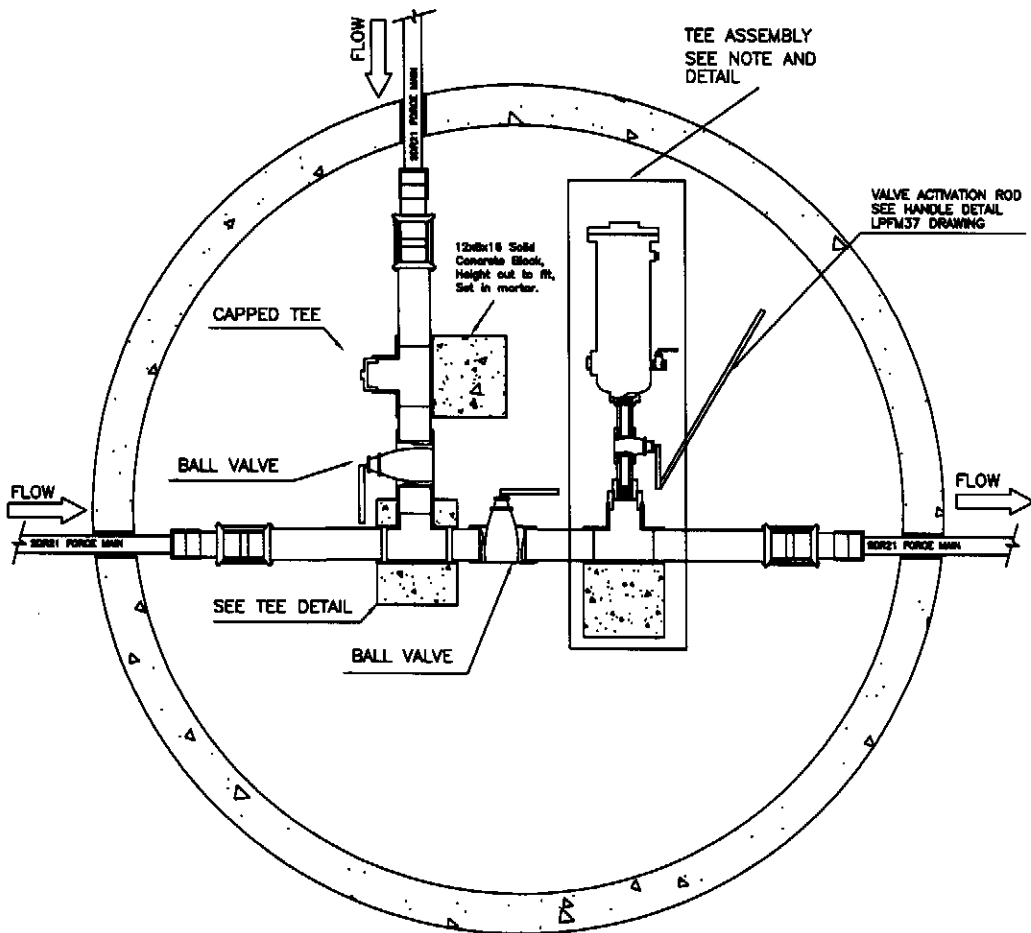


NOTES:
 BALL VALVE AND TEE ASSEMBLIES ARE VERTICAL TO LPFM BUT ARE SHOWN HORIZONTAL FOR CLARITY
 SEE COUPLING DETAIL FOR ALL ROMAC COUPLING POSITIONS
 LOCATION OF AIR RELIEF VALVE AT EITHER TEE IS BY DESIGN

GENERAL NOTES:
 * ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

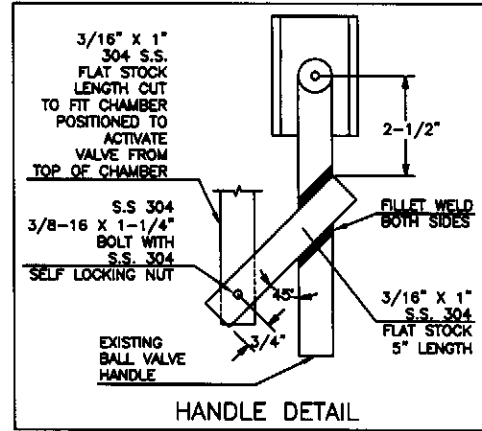
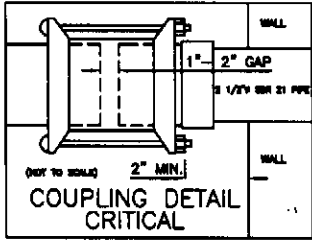
EXPLODED TOP VIEW
 NOT TO SCALE

THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI
 1" TO 2 1/2" LOW PRESSURE FORCE MAIN
 RIGHT TEE AIR RELIEF CHAMBER DETAIL



NOTE:
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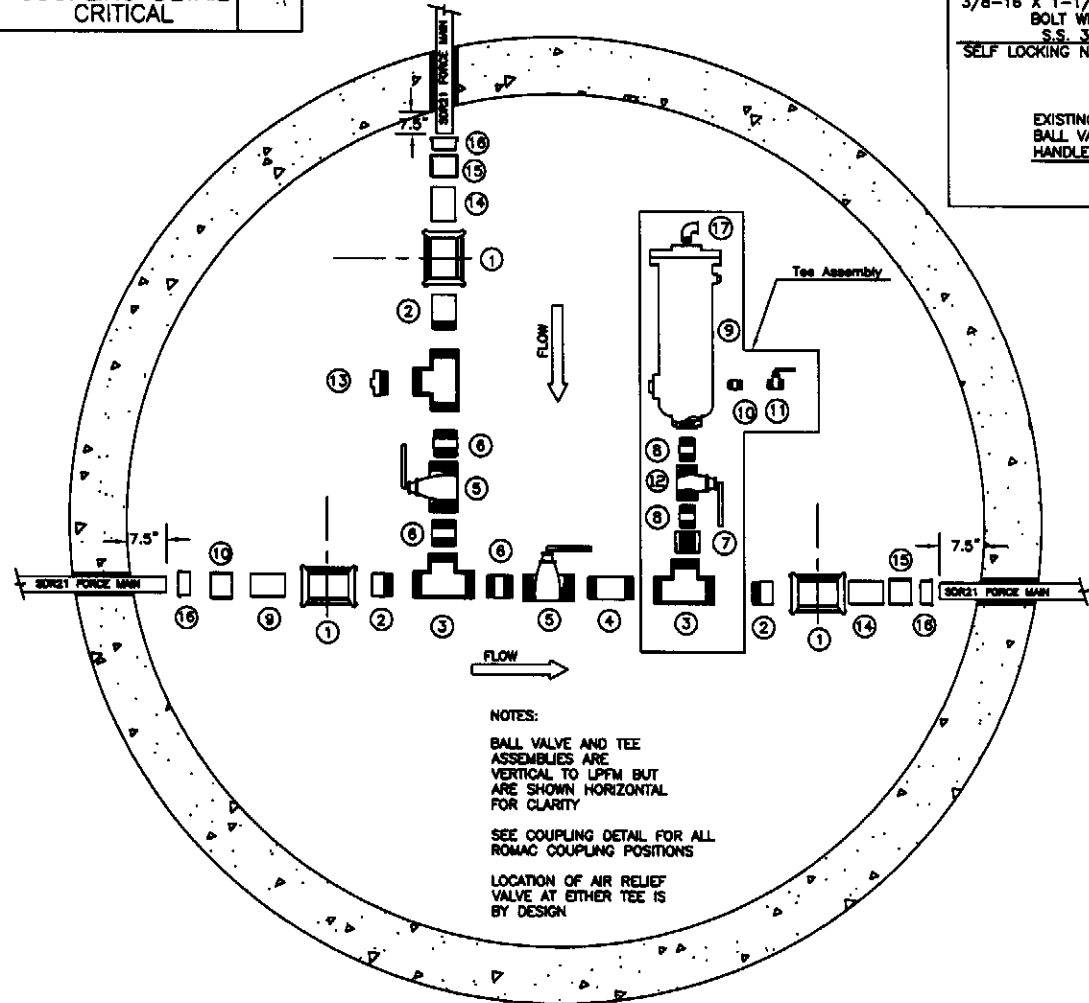
THE
METROPOLITAN SEWER DISTRICT
OF
GREATER CINCINNATI
1" TO 2 1/2" LOW
PRESSURE FORCE MAIN
LEFT TEE AIR RELIEF CHAMBER



- NOTES
- ① ROMAC PART # 511-3.50 X 3.50 X 7SSFE WITH NBR GASKETS
 - ② 3" X 21" PIPE (ONE END THREADED)
 - ③ 3"X3"X3" THREADED TEE (150 PSI)
 - ④ 3" X 7-1/4" PIPE (BOTH ENDS THREADED)
 - ⑤ 3" S.S. STREAM FLOW BALL VALVE MODEL BV150SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE CUT TO FIT MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑥ 3" X 4" NIPPLE (BOTH ENDS THREADED)
 - ⑦ 3" TO 2" BUSHING
 - ⑧ 2" X 3" NIPPLE (BOTH ENDS THREADED)
 - ⑨ AIR RELIEF VALVE ~~ARCO 443.1 OR 446.1~~ (AS REQUIRED) SANDBLASTED AND COATED COAL TAR EPOXY C-200 SHERWIN WILLIAMS OF EQUAL
 - ⑩ 1" X CLOSE S.S. NIPPLE
 - ⑪ 1" FULL PORT S.S. BALL VALVE
 - ⑫ 2" S.S. STREAM FLOW BALL VALVE MODEL BV180SS3FP S.S. FULL PORT S.S. BALL VALVE THREADED HANDLE MODIFIED (SEE HANDLE DETAIL) MAXIMUM CLEARANCE 1" REMOVE LATCH LOCK
 - ⑬ 3" S.S. PIPE PLUG
 - ⑭ 3" X 10" SDR21 PVC PIPE
 - ⑮ 3" SCHEDULE 40 PVC SOCKET GLUE COUPLING
 - ⑯ 3" X (1" TO 2-1/2") SCHEDULE 40 PVC SOCKET BUSHING
 - ⑰ S.S. STREET 90 ~~ARCO 443.1 REQUIRED~~ ~~ARCO 446.1 REQUIRED~~

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NOTES:

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LOCATION OF AIR RELIEF VALVE AT EITHER TEE IS BY DESIGN

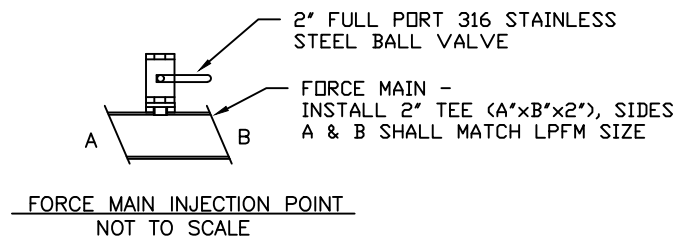
THE METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI

1" TO 2 1/2" LOW PRESSURE FORCE MAIN LEFT TEE AIR RELIEF CHAMBER DETAIL

GENERAL NOTES:

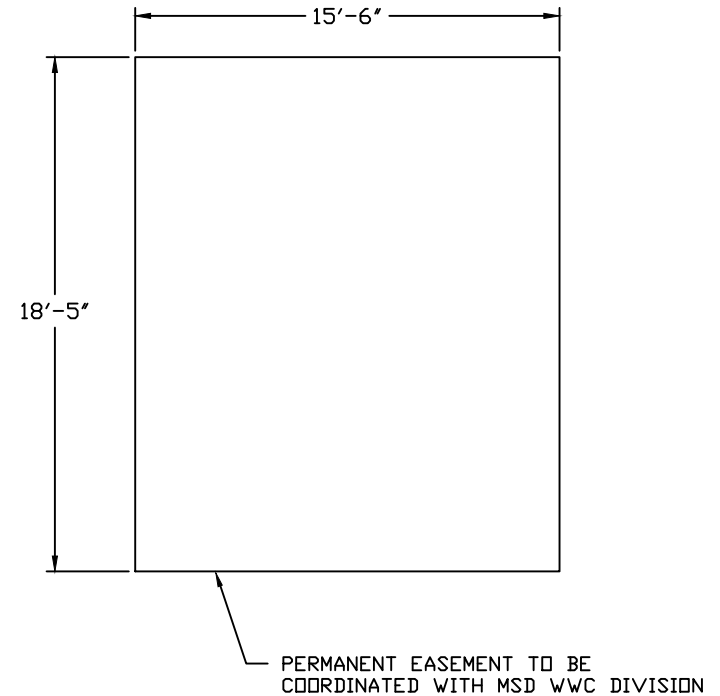
* ALL MATERIALS MUST BE 304 STAINLESS STEEL SCHEDULE 40 (EXCEPT AS NOTED)

EXPLODED TOP VIEW
NOT TO SCALE



NOTES:

1. FORCE MAIN INJECTION POINT SHALL BE SUPPORTED WITH CONCRETE BLOCKING IN A 5' DIAMETER MANHOLE.
2. ANY DEVELOPMENT PROJECT CONTEMPLATING THE USE OF A LOW PRESSURE FORCE MAIN (LPFM) SYSTEM SHALL INCLUDE THE FOLLOWING ITEMS:
 - 2.1. LOCATION OF ODOR CONTROL TANK & DOSING PUMP, ALONG WITH PROPOSED PERMANENT EASEMENT IF OUTSIDE OF THE PUBLIC R/W.
 - 2.2. LOCATION OF PROPOSED MANHOLE WITH ODOR CONTROL INJECTION POINT.
 - 2.3. PROPOSED ACCESS TO PERMANENT EASEMENT FOR ODOR CONTROL UNIT, IF NECESSARY.



THE
METROPOLITAN SEWER DISTRICT
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GREATER CINCINNATI

LOW PRESSURE FORCE MAIN
ODOR CONTROL LAYOUT